BUREAU OF HYGIENE & TROPICAL DISEASES
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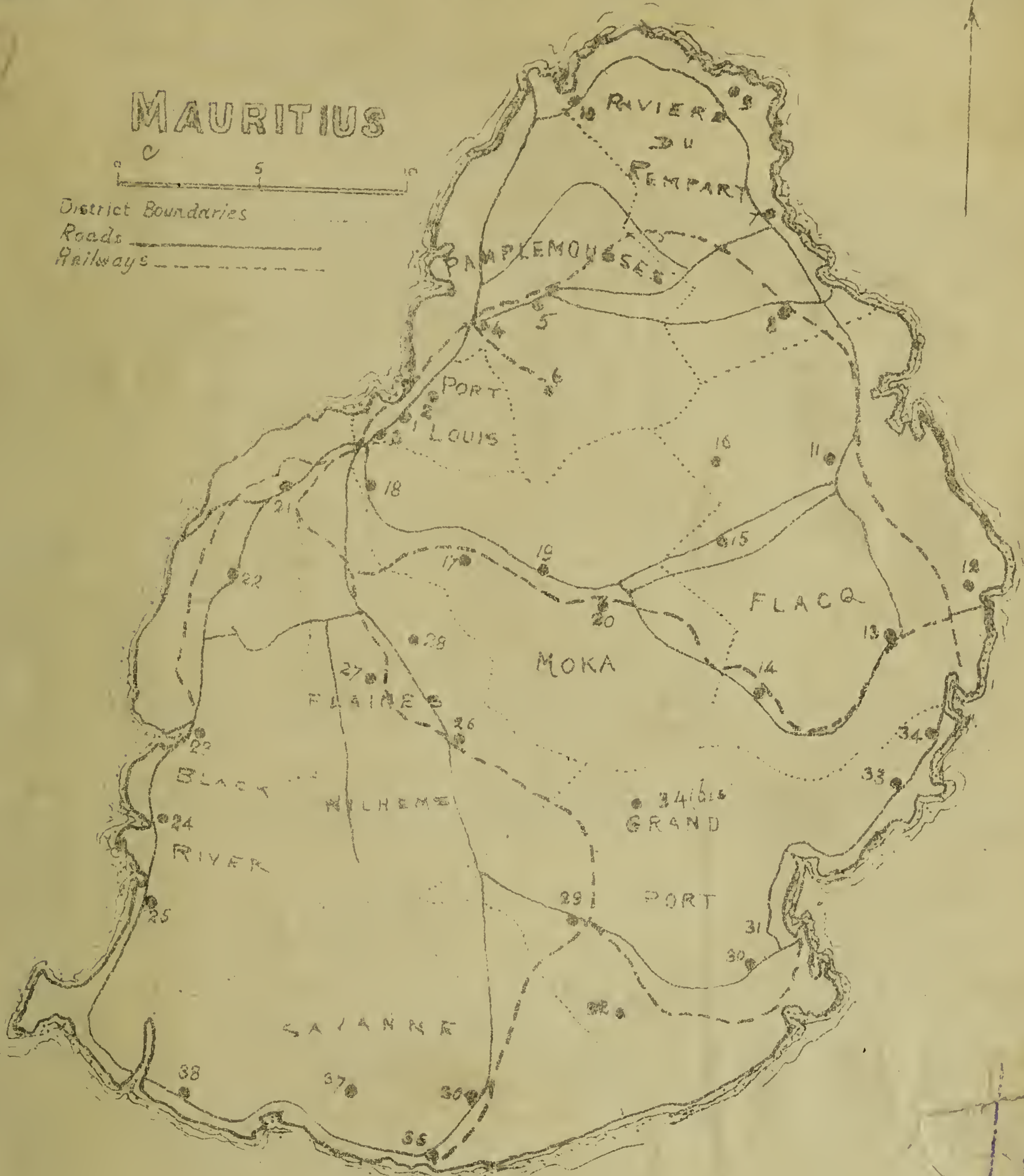
ending 31st Dec 1927



THE SECRETARIAT
MAURITIUS

Hospitals and Dispensaries are shown in the map by numbers as indicated below.

Port Louis	
Civil Hospital	1
Eastern Suburb (St. Francois)	2
Western Suburb (Bell Village)	3
Pamplemousses	
Terre Rouge	4
Pamplemousses (Village)	5
Long Mountain (attached to hospital)	6
Riviere du Rempart	
Poudre d'Or (attached to hospital)	7
Ravin	8
Grand Gaube	9
Grand Bay	10
Flacq	
Flacq Hospital	11
Trou d'Eau Douce	12
Riviere Seche (Bel Air)	13
Sebastopol	14
St. Julien	15
Brisée Verdière	16
Moka	
Moka Hospital	17
Pailles	18
St. Pierre	19
Quartier Militaire	20
Black River	
Petite Riviere	21
Bambous	22
Tamarin	23
Gde Riviere Noire	24
Case Noyale	25
Plaines Wilhems	
Curepipe	26
Vacoas	27
Victoria Hospital (Quatre Bornes)	28
Grand Port	
Rose Belle	29
Plaine Magnien	30
Mahebourg Hosp.	31
L'Escalier	32
Bois des Amourettes	33
Grand Sable	34
St. Hubert	34*bis*
Savanne	
Souillac Hospital	35
Riviere des Anguilles	36
Chemin Grenier	37
Baie du Cap	38

18 JUN 1929

COLONY OF MAURITIUS

ANNUAL MEDICAL AND SANITARY REPORT

FOR THE YEAR ENDING 31st DECEMBER 1927

I.—Administration

1. Dr. T. B. Gilchrist, Director of the Department was absent from the Colony on leave during the year. He was replaced by Dr. Masson, Sanitary Warden Southern Districts until my return to the Colony from leave in March 1927 when I took over these duties from him. Dr. Gilchrist retired from the service in December (Ordinance 46 of 1927) and I had the honour of being appointed in his stead.

The post of Assistant Director was filled temporarily by Dr. P. R. Chevreau from 15th February until the 22nd June when he was unfortunately compelled to retire through ill-health contracted upon active service in the late European War. Dr. J. Cantin was appointed to replace him on July 17th. The assistance of Dr. E. Rama and of Inspector J. D. Léonce, Cert. Roy. Sant. Inst. enabled me to exercise a general supervision of the sanitation of Port Louis.

Dr. A. G. Masson left on leave of absence on 13th July and Dr. Pilot who joined the Department on June 20th as Sanitary Warden North was placed temporarily in charge of the Southern Districts and Flacq until the Hookworm Campaign had been completed in Pamplemousses and Rivière du Rempart. The duties of Sanitary Warden of these districts were kindly performed by Dr. A. C. d'Arifat, the Officer in charge of the Hookworm Campaign so long as he was operating there. On November 1st the Hookworm Campaign moved to Flacq and Dr. Pilot then assumed his substantive post as Sanitary Warden Northern Districts, taking in addition the districts of Moka and Savanne during the absence of Dr. Masson; Grand Port Sanitation being supervised by the Medical Officer of Health, Plaines Wilhems.

It cannot be said that such administrative expedients are entirely satisfactory in practice, but with the limited number of trained personnel available, they are the only means whereby Medical Officers of the Sanitary Branch may obtain the leave of absence to which their service entitles them.

Dr. Comty arrived in the Colony on May 6th and assumed duty as Assistant Superintendent Mental Hospital on the same date.

Dr. F. A. Rouget, O.B.E., M.D. retired from the service on 1st October 1927 after having given more than 31 years of valuable work to the Department in general and to the Civil Hospital, Port Louis, in particular. He was Medical Superintendent of the Civil Hospital for 25 years during which time be managed its affairs with conspicuous success in spite of many handicaps, financial and other. He was also responsible for the submission of valuable suggestions for the betterment of the establishment under his care and it is gratifying to be able to state that certain of them are now being carried into effect with undoubted benefit to those whom they concern.

Dr. E. de Robillard assumed duty as Medical Superintendent, Civil Hospital on 1st October 1927.

Dr. L. R. du Vergé M.C. assumed duty as Medical Superintendent, Victoria Hospital on 1st December 1927.

A second Resident Surgeon was appointed to Victoria Hospital on 11th April 1927. Dr. V. P. Goupille was selected for this post.

A similar post was created at the Civil Hospital, Port Louis, to which Dr. L. Arthur Célestin was appointed on the usual terms. On the retirement of Dr. Sinnatambou from the service in 1927 Dr. Célestin was transferred temporarily and provisionally to the post of Government Medical Officer Savanne and the post at the Civil Hospital thus left vacant was occupied provisionally by Dr. H. Mollière.

Dr. R. Laventure was appointed to the Medical service of the Colony on October 13th and was detailed for duty as Police and Prison Sergeon, Port Louis, Government Medical Officer and Sanitary Authority for Black River, in the room of Dr. P. de Chaumont, transfered as Assistant Government Medical Officer, Flacq.

Dr. C. Camal Boudou's engagement with the Department terminated on the assumption of duty as Medical Officer of the Hookworm Campaign by Dr. A. C. d'Arifat.

Mr. A. A. Purvis, Chief Sanitary Inspector retired from the service on 14th April 1927.

The Professional Staff of the Department as on 31st December 1927 was as follows :—

2. Staff on 31st December 1927.

Director : J. Balfour Kirk, M.B. Ch.B., D.P.H., D.T.M. & H.
Medical Assistant to the Director : Jean Cantin (Temporary and provisional).
Medical Officer of Health, Port Louis : *Vacant,*
Dr. E. Rama acting from 13.10.26.

Medical Officer of Health, Plaines Wilhems: F. J. R. Momplé, M.B , C.M., D.P.H.
Superintendent Bacteriological Laboratory and Government Analyst: L. G. Barbeau, M.B., C.M., D.P.H.
Sanitary Warden (Northern Districts): L. M. J. Raymond Pilot, M.B.B.S., M.R.C.S., L.R.C.P., D.T.M. & H.
Sanitary Warden (Southern Districts): A. G. Masson, M.B., Ch.B. (on leave).
Port Health Officer and Medical Inspector of Port Louis
Schools: F. L. Keisler, L.R.C P & S; L.F.P. & S; D.P.H.
Superintendent, Mental Hospital: J. D Dyson, M.B.B.S.; D.P.M; M.R.C.S.; L.R.C.P.
Assistant Superintendent, Mental Hospital: L. N. René Comty, M.R.C.S., L.R.C.P., M.B.B.S.
Superintendent Civil Hospital: Evariste de Robillard, M.R.C.S., L.R.C.P.
Resident Surgeon, Civil Hospital: G. Seneque, M.D.
Superintendent Victoria Hospital: Louis Rathier du Vergé, M.C., M.R.C.S., L.R.C.P.
Resident Medical Officer, Victoria Hospital: W. R. Dupré, L.R.C.P & S.
Police and Prison Surgeon, Port Louis, and District (Government) Medical Officer and Sanitary Authority for Black River: Renald Laventure, M.D. (Montpellier),
Government Medical Officer, Plaines Wilhems: Dr. L. Maingard, L.M.S., S.A. London, "Mèdecin Colonial" Paris.
Tuberculosis and Venereal Diseases Medical Officer: D. D. Anderson, L.S.A.; M.R.C.S.; L.R.C.P.; D.T.M. & H.
Medical Officer i/c Hookworm Branch: A. C. d'Arifat, M.R.C.S., L.R.C.P.
Assistant Resident Surgeon, Victoria Hospital: V. Pierre Goupille, M. D. (Paris).
Resident Surgeon, Civil Hospital; H. Mollière M.B., Ch. B. (temporarily and provisionally).

DISTRICT MEDICAL OFFICERS.

(Government Medical Officers having charge of a District Hospital and of all the Dispensaries in their district).

Pamplemousses: J.H. André, M.R.C.S., L.R.C.P.
Rivière du Rempart: S. Piarroux, L.R.C.P. and S; L.F.P. and S.
Flacq: H.G. Lamberty, L.R.C.P. and S.; L.F.P. and S.
Grand Port: A.Y. Cantin, M.R.C.S.; L.R.C.P., D.T.M.
Savanne: L.A. Celestin, M.R.C.S., L.R.C.P. (Temporarily and provisionally).
Moka: G. A. Leclezio, M.R.C.S.; L.R.C.P.; D.P.H.
Assistant Government Medical Medical Officer, Flacq: Ph. de Chaumont, M.B.B.S.; M.R.C.S.; L.R.C.P.

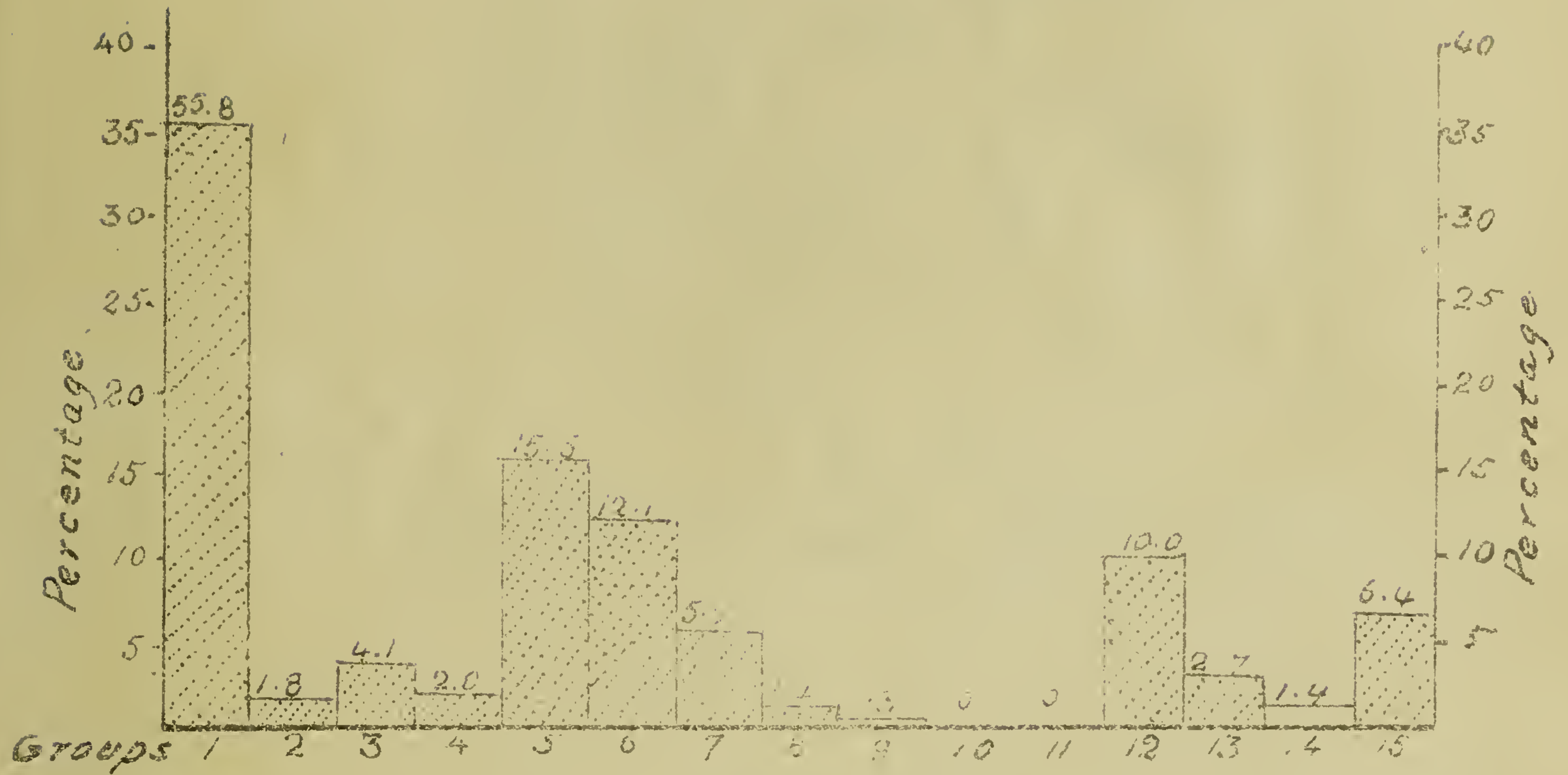
Ordinances affecting the Public Health enacted during the year.

3. These Ordinances are as follows:—
   (a) Ordinance 7 of 1927. To amend the Animal Diseases (Consolidation Ordinance 1925;
   (b) Ordinance No. 8 of 1927. To amend the slaughtering of Cattle Restriction Ordinance 1918; provides for increased penalties;
   (c) Ordinance No. 14 of 1927:—To regulate the practice of Medicine and Surgery in the Colony. This Ordinance, known as the Medical Practitioners' Ordinance 1927 repeals Ordinance 22 of 1869 which has long been considered to be inadequate. The only persons who may now practise medicine in the Colony are those who are holders of (a) degrees or diplomas registrable in the United Kingdom or (b) state degrees of Doctor in Medicine of any of the Faculties of France;
   (d) The Medicinal Tinctures and Drugs Ordinance (35 of 1927) provides for the licensing under the control of the Health Department of any establishment used for preparation of Medicinal Tinctures and Drugs, and it also provides that no such establishment may be worked unless it is under the direct supervision of a competent pharmacist. Power of inspection and assay of the drugs and tinctures is given to the Director of the Health Department;
   (e) Ordinance 38 of 1927 amends the Notification of Births Ordinance 1925 by providing for the Notifications of Births being made to the Government Medical Officers of the districts in which the births take place instead of to the Director of the Health Department as was formerly the case.

FINANCIAL.

4. The revenue of the Colony for the year 1927 was	Rs. 15,452,191
The expenditure on Medical and Sanitary Services out of the revenue was	2,135,786
The expenditure on Medical and Sanitary Services from the Improvement and Development Fund was	49,938

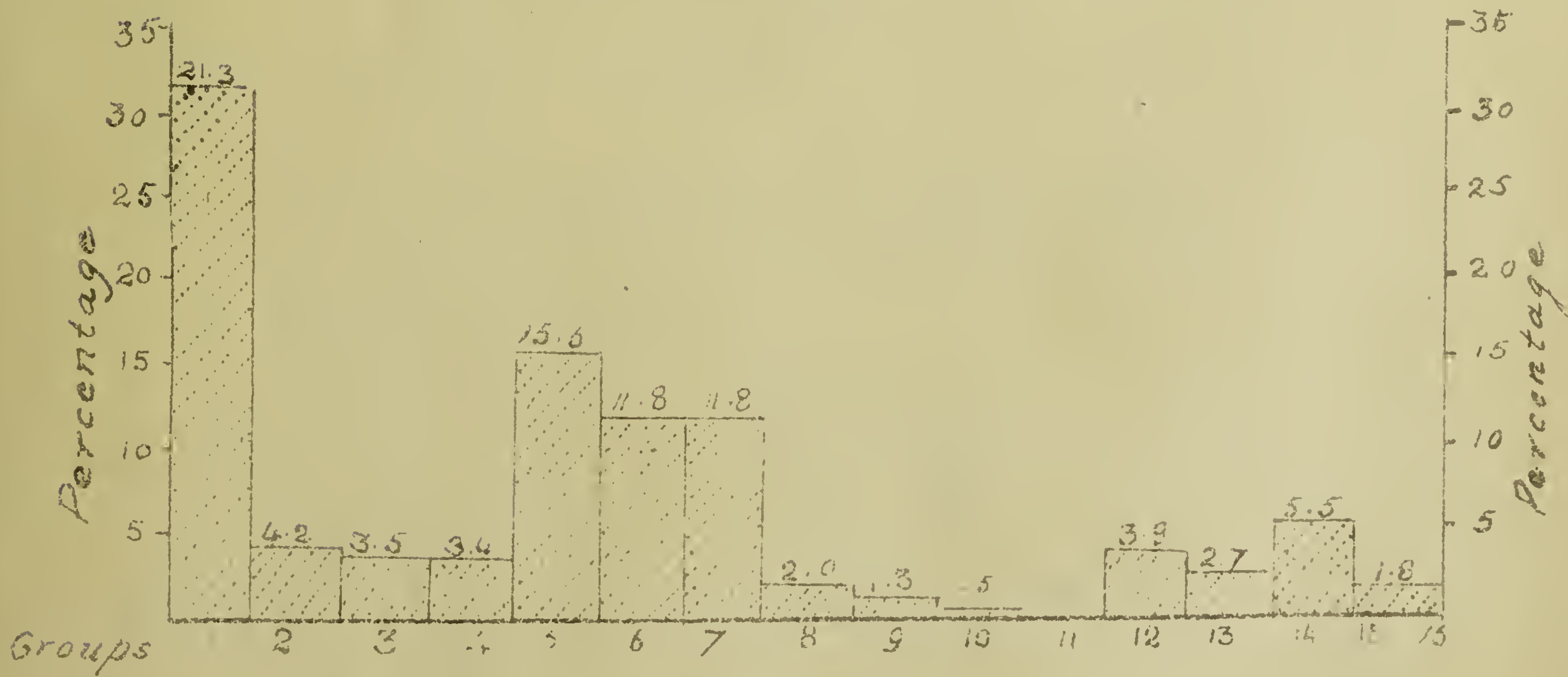
GRAPH 1 — A



Registrar General Statistics of Causes of Death

% of total Deaths in the Colony

B

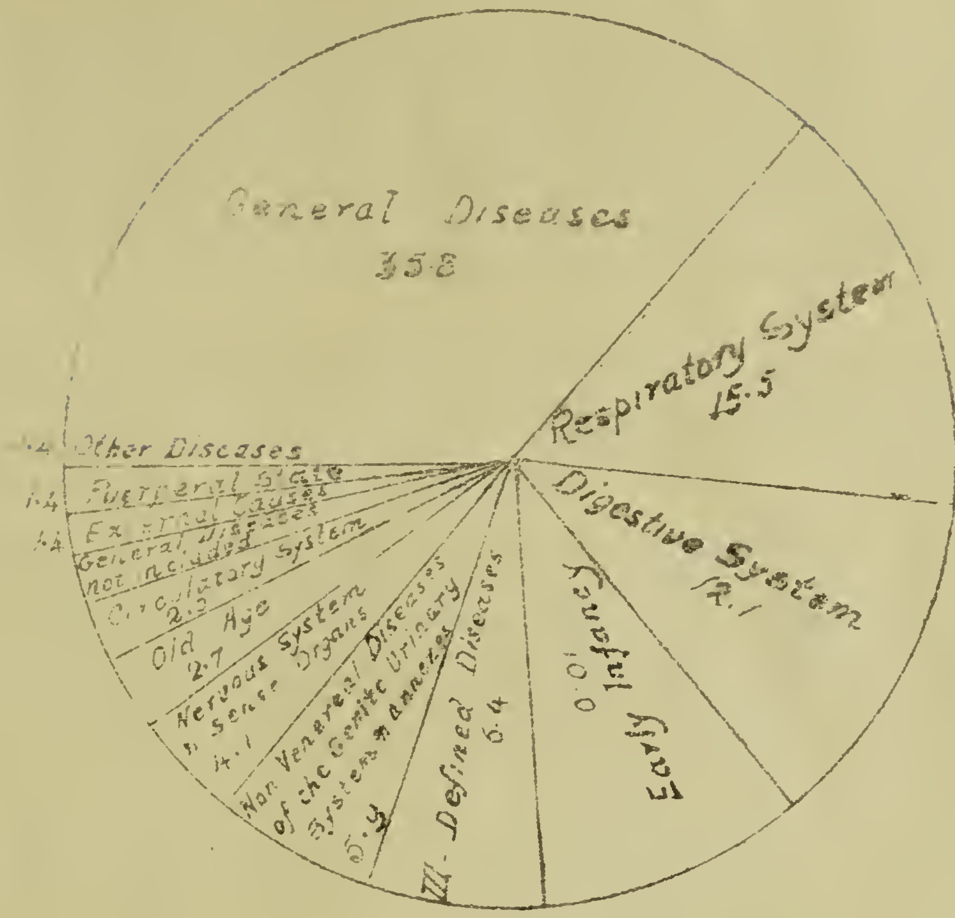


Hospital Statistics of Causes of Death

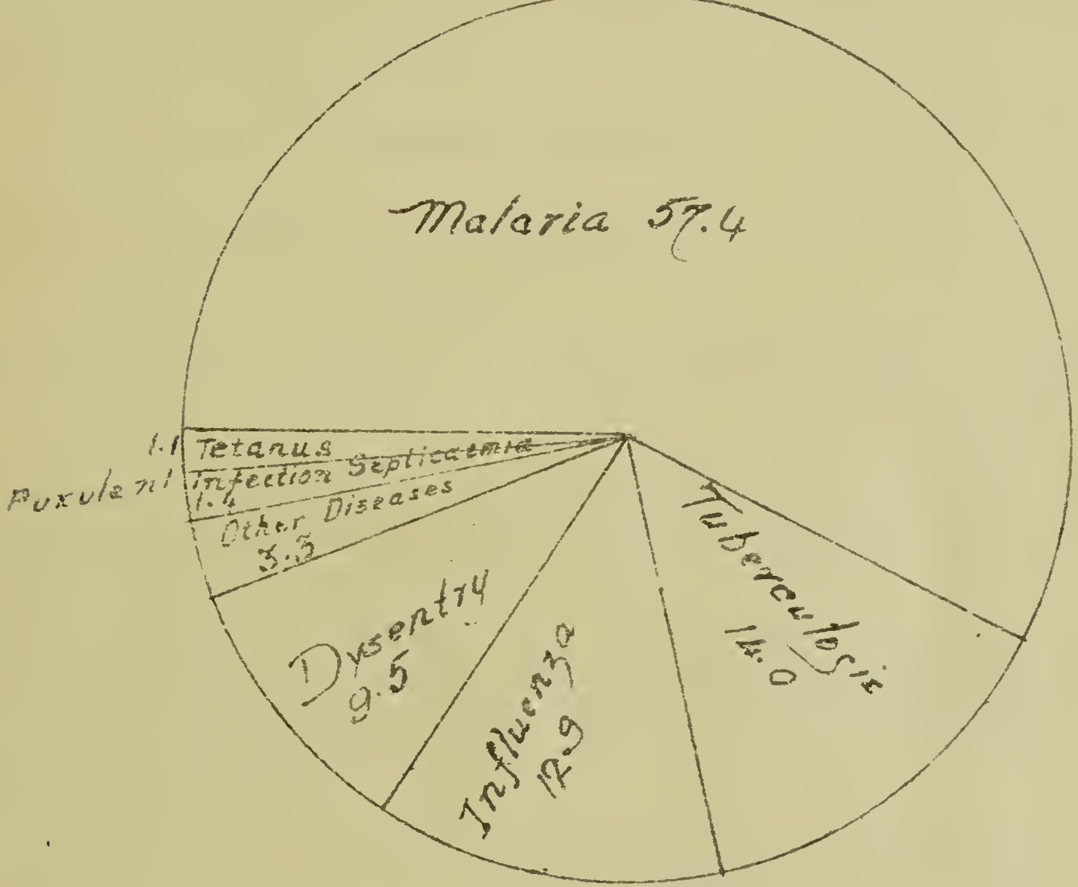
% of total Deaths in Hospitals

GRAPH - II

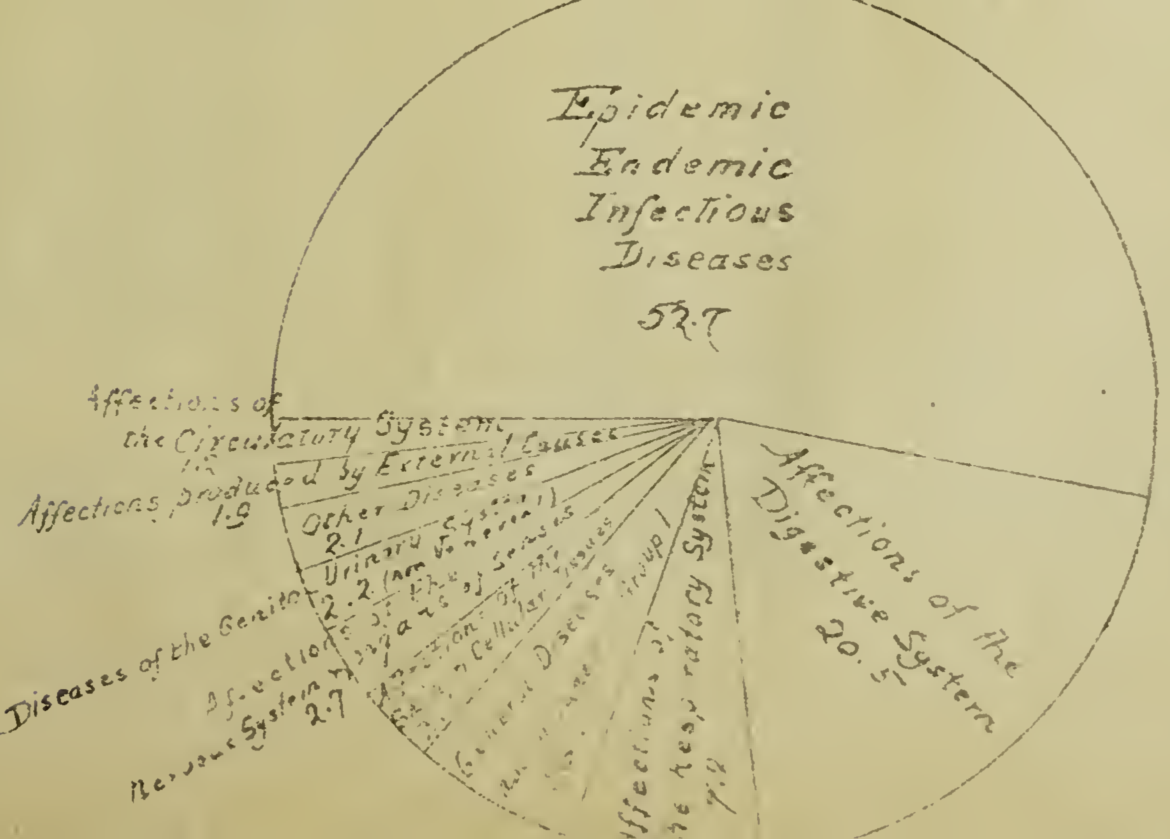
Total Deaths



Communicable Diseases



General Diseases



II.—Public Health.

5. The general economic condition of the population was lower in 1927 than in the immediately preceding years and this deterioration is bound to be reflected in the vital statistics sooner or later. The Death Rate for 1927 is lower, but this is offset by the relatively great decrease in the birth rate from 39·4 in 1926 to 34·5 in 1927 as well as by the increase in the infantile mortality rate from 120.6 per o/oo to 136·6 per o/oo. It is too early yet to know whether these changes are purely adventitious or whether they are evidence of some profound process of adjustment between the population of the Colony and its economic resources.

No epidemics were recorded during the year but there has been a good deal more sickness. Thus, while 21,997 persons were admitted to the general hospitals during 1926, 24,818 were admitted during 1927, an increase of 2,821 while the Dispensaries were consulted upon 2,731 more occasions than in the previous year.

10 fewer cases of malignant disease were admitted to the hospitals than in 1926, the figures being 113 cases for 1927 as compared with 123 during 1926. Over half (62) of these tumours were situated in the female genital organs and breast, the stomach and liver accounted for 13, peritoneum and intestinal tract for 9, buccal cavity for 8 and skin 5. In 16 cases the site was not specified. The non-malignant new growths numbered 45. The total number of deaths from cancer was 65, giving a cancer death rate of 0.15 o/oo.

Graph 1 is compiled from a statistical summary of the causes of death as ascertained from (A) the Registrar General's Report, and (B) the Hospital Statistics. The causes of death as given by the Registrar General are open to question owing to the fact that a large proportion of these deaths are never certified by a medical practitioner at all. But a comparison of the graphs shows that the grouping of the causes tends to eliminate the effects of such errors of diagnosis and gives one a reasonably accurate idea of the general causes of death in the Colony. The significant feature of these graphs is the comparative size of the toll the population pays to the preventable diseases.

COMMUNICABLE DISEASES

INSECT—BORNE DISEASES.

MALARIA.

6. Four species of Anopheles are known to exist in the Colony, viz: A. costalis, A. funestus, A. maculipalpis and A. mauritianus. The principal transmitter of malaria is A. costalis.

It is possible to record only the number of patients suffering from malaria in hospitals or applying for treatment at dispensaries, and the number of deaths certified by Medical Practitioners as being due to this disease.

The total number of admissions to hospital of patients suffering from Malaria was 2,592, an increase of 108 over the figure for the previous year. The case mortality was 1.69%.

The following tabular statement shows the admissions for Malaria and deaths ascribed to it during this and the preceding year.

INSTITUTIONS	MALARIA Admissions 1926	Admissions 1927	Deaths 1926	Deaths 1927
Civil Hospital	617	480	26	7
Port Louis Prison... ...	21	48	1	...
Long Mountain Hospital ...	173	213	...	3
Poudre d'Or Hospital ...	493	671	8	12
Flacq Hospital	68	218	1	4
Mahebourg Hospital ...	249	236	3	4
Souillac Hospital... ...	204	248	1	2
Victoria Hospital... ...	357	337	3	9
Beau Bassin Prison ...	102	88	...	...
Moka Hospital	41	13	...	2
Mental Hospital	25	28	...	1
	2,350	2,580	43	44

The total number of deaths from Malaria and Malarial Cachexia, 2,095, is equivalent to a death rate of 5.26 $^{0}/_{00}$ living. The rate for 1926 was 4.6 $^{0}/_{00}$.

A good guide to the Malarial prevalence in the districts is the examination of the spleen rates in school children. On an average 18,459 children are examined half yearly by the Medical Officers concerned, with the following result.

District	1925	1926	1927
	%	%	%
Port Louis	5.40	3.9	4.4
Pamplemousses	9.7	11.34	
Rivière du Rempart	13.5	10.95	
Flacq	19.2	26.56	27.6
Grand Port	18.0	22.71	21.9
Savanne	12.5	17.23	12.9
Black River	58.6	59.1	54.4
Plaines Wilhems	1.27	1.47	1.5
Moka	4.05	3.29	3.8

It should be noted that worm infection of children is practically universal in the Colony, and this may tend to raise the splenic indices. As the infection is practically uniformly distributed, however, it does not affect the statistics for the Districts although it would prevent accurate comparison with the figures for other countries.

FILARIASIS

7. During August and September, with the assistance of Dr. E. Rama and Sanitary Inspector J. D. Leonce I was able to make a limited filarial survey in Port Louis. The survey was made by the examination of approximately 20 cubic millimetres of finger blood taken from healthy persons between 8.30 p.m. and midnight, prepared as thick films and examined unstained after dehaemoglobinisation. 663 specimens were thus obtained from the general public and these showed an infection rate of 11.2%. The infected specimens all showed micro-filaria bancrofti.

PLAGUE

8. Seven plague cases were discovered during the year. They all occurred in Port Louis The country districts have not shown any infection either in rats or in man.

The following table shows the number of plague cases notified to the Sanitary Authority since 1921.

Year	Cases	Deaths	Case mortality
			%
1921	375	297	79.2
1922	98	75	76.5
1923	139	118	84.8
1924	161	144	89.4
1925	74	65	87.8
1926	46	41	89.1
1927	7	5 (a)	57.1 (b)

TYPHUS FEVER

9. No case of this disease was notified during the year.

B.—INFECTIOUS DISEASES

SMALL-POX

10. There has been no small-pox in the Colony since 1913. 10,035 children were vaccinated during 1927 by the public vaccinators. The data are given hereunder:—

Successful vaccinations on 1st attendance	8,984	
,, ,, 2nd and subsequent attendances	955	
		9,939
Unsuccessful vaccinations		51
Vaccinations in which the results could not be ascertained		45
Total		10,035

The proportion of vaccinated children to live births is 72.99% compared with 86.38% for 1926. These figures give only the numbers of children vaccinated by the public vaccinators in the Colony, and do not include those vaccinated by private practitioners. There is no reason to think that the proportion of children vaccinated by the public vaccinators as compared with those vaccinated by private practitioners has varied to any great extent in the two years under review, so that these figures probably represent a falling off in the number of successfully vaccinated children. This is to be deplored. Mauritius, at present small-pox free, is in constant communication with countries where the disease is endemic and although the quarantine laws permit measures to be taken which may give a reasonable guarantee against the introduction of the disease into the Colony, they cannot give an absolute guarantee that it will be excluded. Unless the community is, as a whole, efficiently vaccinated and re-vaccinated, there is constant liability to the epidemic spread of the disease when introduced and subsequent long and expensive campaign for its eradication.

(a) Includes the death of a case carried over from the previous year.
(b) The case mentioned in note (a) above is not included in this figure.

The actual state of affairs is worse than these remarks and figures convey because it has been found that an appreciable number of school children in possession of certificates of successful vaccination have shown no sign of ever having been vaccinated and have exhibited a primary take when they have been "re-vaccinated." These children, or the majority of them are being rounded up, but it is disquieting to know that there must be quite a number of children of pre-school age who are still totally unprotected if the disease should succeed in evading the Quarantine barrier.

ENTERIC FEVER

11. 117 cases were notified. 61 of them received hospital treatment with a case mortality of 14.75%. The reports of the Medical Officers of Health and the Sanitary Wardens indicate that the infection at no time took on an epidemic form. There has been no evidence to incriminate water or milk as vehicles of the infection.

DIPHTHERIA

12. 53 cases of diphtheria were notified in 1927. The disease appears to bear most heavily on those living in the cooler regions of the Colony.

PUERPERAL STATE

13. 147 deaths were registered as being due to the puerperal state.

The deaths are classified as under :—

Puerperal fever ...	17	Albuminuria of pregnancy	3
Puerperal convulsions ...	4	Abortion	2
Puerperal embolism ...	1	Eclampsia	8
Puerperal hæmorrhage ...	9	Sudden death after delivery ...	1
Puerperal Sepsis ...	4	Other accidents of child birth ...	98

18 cases of puerperal septicæmia, of which 7 proved fatal, were treated in hospital—a case mortality of 38.8%.

The mortality rate of child birth in 1927 was 10.6 per o/oo. This is about treble the average European rate.

The causes of the high mortality among the mothers of the Colony are doubtless many, but the principal would appear to be lack of skilled medical attention at childbirth. This is by no means entirely due to a shortage of doctors in the Colony, and must be explained by a survival of archaic prejudice amongst a large proportion of the people.

MEASLES

14. Only one case of this disease was notified during the year. The patient was treated at Mahebourg Hospital.

ERYSIPELAS

15. 41 cases were notified, compared with 31 in 1926. 6 deaths were registered.

PULMONARY TUBERCULOSIS

16. Out of the 10,015 deaths of 1927, 485 were due to pulmonary tuberculosis, giving a death rate of 12 per 10.000 inhabitants. This compares favourably with the deaths from the same cause for 1925 and 1926 which were 817 and 768 respectively.

The total number of new cases examined for Pulmonary Tuberculosis at the various clinics in Port Louis during 1927 has been 1117. Of these, 729 males and 313 females were found to be infected.

The Tuberculosis Officer has attempted to estimate the amount of Pulmonary Tuberculosis in the Colony. He found that the infection rate for Port Louis lay between 3.4 and 4%, but that the rate for the country districts was very much less. He is of opinion that general rate for pulmonary tuberculosis may be reckoned as being 0.6%, i.e. that there are approximately 4,000 tuberculous persons in the Colony. From his experience he reckons that 25% of them are in a curable stage of the disease when they appear at the Dispensary and he has made certain recommendations with regard to their care.

LEPROSY

17. The Leprosy Board examined 22 persons alleged to be suffering from Leprosy and recommended detention of 14. Of these cases 10 were of the anaesthetic type, and 4 nodular, the districts in which the cases were discovered were as follows: Flacq 3, Grand Port 3, Savanne 2, Plaines Wilhems 2, Pamplemousses 3 and Port Louis 1. The majority of the patients were suffering from leprosy of several years standing. Only 3 cases (2 nodular and 1 anaesthetic) could be considered as being of recent origin.

The place of detention is the Powder Mills Leper Hospital. On the 31st December 1927, 32 males and 15 females were under detention there. The standard treatment is the E. C. C. O. mixture, but during 1927 treatment by intravenous Sodium Hydnocarpate, specially prepared by Burroughs Welcome, was begun.

18. A sum of Rs. 2,000 was bequeathed to the Leper Hospital by the late Mr. Frederick Rouillard. The amount has been invested in Government Funds and it is proposed to spend the income derived therefrom in procuring occasional treats to the inmates.

CHICKEN POX

19. One case of this disease was treated at the Civil Hospital, Port Louis, and 9 at Barkly Industrial School Hospital, Beau Bassin.

VENEREAL DISEASES

20. 321 cases of syphilis, with 15 deaths, were admitted to the Hospitals during the year. The details are given in Appendix IV return of Diseases (Hospitals) 274 cases of Gonorrhœa were treated, and 30 cases of chancroid.

The Clinic had a busy year. The statistics are as follows :—

New cases passing through the Clinic male ... 231,	female ...65	total	296
do. do. Venereal Wards		...	1,187
		Total	1,483

Total inpatients ... 276. Average stay in Hospital ...		... 3½ weeks
Total outpatients ; male ... 2,871, female	... 624,	total 3,495.
Gynoecological examinations	... 71	
do. treatments	... 1,026	
Male urethral irrigations	... 3,890	
Prostatic massages	... 1,250	
Injections given :		
Organic arsenic	... 1,500	
Insoluble Bismuth salts	... 816	
Various	... 672	
Wassermann tests	... 251	
Surgical Operations	... 8	

The Venereal problem in the Colony is not an easy one to prescribe any solution for. Taking local conditions into account I would be inclined to deprecate the enactment of so-called anti-venereal legislation based upon the compulsory notification of these diseases. I am of opinion that the best results will be obtained by extending the provision of means of adequate treatment and the conduct of a discreet educational campaign in connection with the various clinics thus established. The most powerful propagandist agency is adequate treatment, and every case properly treated means another source of infection eradicated.

MERCHANT SEAMEN.

21. During the year, Mauritius has come fully into line with the recommendations of the International Conference of Brussels (1920) on the treatment of sailors of the merchant services. In addition to the means provided in 1926, the universal "treatment continuation" card is now in use, and the Port Health Officer distributes to all incoming ships pamphlets printed in English, French and Urdu which set forth the dangers of Venereal Disease and give particulars of where free treatment can be obtained in Port Louis. Information regarding these services is now included in the world directory of Venereal Clinics issued by the British Social Hygiene Council.

Incidence of Venereal Disease in the Dispensary classes.

Dr. Anderson's figure for the incidence of venereal disease in the Dispensary class of patients are as follows :—

	Male	Female
Syphilis	13%	14%
Gonorrhoea	21%	25%

C.—HELMINTHIC DISEASES

FILIARIASIS

22. Four deaths have been registered as having been due to filariasis during the year. Micro-filaria bancrofti is the only micro-filaria so far diagnosed in man in the Colony.

ANKYLOSTOMIASIS

23. The Annual Report on the Hookworm Campaign is printed separately (Appendix II). The relationship between Ankylostomiasis and alcoholism is a feature which does not seem to have been recorded before. It would appear to be fraught with such important economic consequences that it would be well worth while to make it the subject of a detailed study.

SCHISTOSOMIASIS

24. 63 cases of this condition were treated in the hospitals during the year, and 74 at the dispensaries. It is probable that many of the hospital cases are included in the Dispensary return. It has no importance as a cause of death, although it must cause a good deal of misery to the unfortunate patients.

The local intermediate host has not yet been determined.

VITAL STATISTICS

25. The distribution of the population and its density in each District are shown hereunder.

Estimated Population of Mauritius on 31st December, 1927.

Districts	Area in square miles	General Population			Indian Population			Total Population			Density per square mile
		Males	Females	Total	Males	Females	Total	Males	Females	Total	
Port Louis	16	16,261	14,666	30,927	11,985	11,202	23,187	28,246	25,868	54,114	3,382.12
Pamplemousses ...	69	3,397	3,244	6,641	16,381	15,106	31,487	19,778	18,350	38,128	552.57
Rivière du Rempart ...	57½	3,190	2,867	6,057	14,399	13,476	27,875	17,589	16,343	33,932	590.12
Flacq	115	5,705	5,265	10,970	23,094	21,382	44,476	28,799	26,647	55,446	482.14
Grand Port	101	6,898	6,542	13,440	19,975	18,077	38,052	26,873	24,619	51,492	509.82
Savanne	93½	3,962	3,778	7,740	14,407	12,750	27,157	18,369	16,528	34,897	373.23
Plaines Wilhems ...	78	16,417	18,940	35,357	26,153	24,854	51,007	42,570	43,794	86,364	1,107.23
Moka	89	2,852	2,934	5,786	14,182	13,081	27,263	17,034	16,015	33,049	371.33
Black River	101	2,687	2,567	5,254	4,728	4,289	9,017	7,415	6,856	14,271	141.29
Total ...	720	61,369	60,803	122,172	145,304	134,217	279,521	206,673	195,020	401,693	557.9

The chief feature of interest here is the high density of population : 557.9 for the Colony.

Marriages

26. 1,431 marriages were celebrated in 1927 as compared with 1,479 in 1926, showing a decrease of 48. This is equivalent to a marriage rate (number of persons married to every thousand of population) of 7.2 °/₀₀.

Births

27. The total number of births for the year was 13,748 (7,089 males and 6,659 females). 4,417 of these occurred in the General, and 9,331 in the Indian population. The birth rate was 34.5 °/₀₀.

The District birth-rates (on population as at 1st January of each year) and the five-year mean rates are as follows :—

District	1923	1924	1925	1926	1927	Mean °/₀₀
Port Louis ...	39.9	42.9	42.0	39.5	36.0	40.04
Pamplemousses ...	31.0	37.4	39.8	39.2	33.3	36.13
Riv. du Rempart ...	32.6	41.2	43.6	41.2	34.9	38.71
Flacq ...	34.3	38.4	42.0	35.4	31.1	36.22
Grand Port ...	36.1	37.0	40.7	38.0	31.0	36.55
Savanne ...	39.2	38.9	39.4	34.5	30.7	36.48
Plaines Wilhems ...	39.7	44.0	47.2	44.9	40.3	43.23
Moka	42.8	46.7	46.6	40.5	36.0	42.44
Black River ...	27.3	27.6	32.9	33.2	29.0	29.28
Whole Colony ...	36.8	40.4	42.6	39.4	34.5	38.74

It will be observed that there has been a well marked fall in the birth-rate, which is the lowest recorded in five years. It would be futile at this period to speculate as to the meaning of the fall which may be quite accidental.

Deaths

28. During the year 1927 the total number of deaths was 10,015 (5,220 males and 4,795 females; 2,841 in the General and 7,174 in the Indian population). This number is an increase of 57 over the total deaths of 1926.

The death rate for the Colony was 25.1°/₀₀ compared with 25.3°/₀₀ for 1926 and with 27.9°/₀₀ for the quinquennial period preceding 1927. The month of maximum mortality was March.

The following table shows the district death-rates ([a]) yearly for the five yearly period 1923–27 and the average rates for the same period :—

Districts	1923	1924	1925	1926	1927	Average o/oo
Port Louis	34.1	34.6	26.1	28.0	27.7	30.03
Pamplemousses ...	34.1	30.5	26.5	28.8	33.2	30.61
Riv. du Rempart ...	27.9	26.8	23.3	25.6	25.5	25.82
Flacq	27.8	28.1	24.8	25.7	27.9	26.87
Grand Port ...	34.6	31.0.	26.0	29.6	24.5	29.10
Savanne	25.7	24.8	24.1	25.4	24.1	24.81
Plaines Wilhems ...	21.0	20.6	19.4	18.4	18.1	19.45
Moka	25.8	24.3	21.8	22.8	25.8	24.11
Black River ..	30.5	36.5	32.4	33.2	28.5	32.25
Whole Colony ...	28.5	27.7	24.1	25.3	25.1	26.11

(a) These are crude death-rates, i.e. deaths irrespective of any consideration as to whether they are indigenous to the district or imported from another district.

The death-rate for Plaines Wilhems is the lowest death-rate of all the districts of the Colony.

The next table, with the figures for 1926 inserted for purposes of easy comparison summarises the causes of death and the rates in the usual groups [b]:—

Group	No. of deaths 1926	No. of deaths 1927	Rate ‰ 1926	Rate ‰ 1927
I. General Diseases	3,876	3,592	9.9	9.0
II. General Diseases (not including above) ...		185		.5
III. Diseases of the nervous system and sense organs	404	411	1.0	1.0
IV. Diseases of the circulatory system ...	180	209	.5	.5
V. Diseases of the respiratory system ...	1,432	1,556	3.6	3.9
VI. Diseases of the digestive system	1,220	1,212	3.1	3.0
VII. Non-Venereal diseases of the genito-urinary system and annexa	607	600	1.5	1.5
VIII. The puerperal state	229	147	.6	.4
IX. Diseases of the skin and cellular tissue ...	36	32	.1	.1
X. Diseases of the bones and of the organs of locomotion	4	7	.0	.0
XI. Congenital malformations	4	2	.0	.0
XII. Diseases of early infancy	964	1,003	2.5	2.5
XIII. Old age	278	272	.7	.7
XIV. Affections produced by external causes ...	160	142	.4	.4
XV. Ill-defined diseases	564	645	1.4	1.6
	9,958	10,015	25.3	25.1

The more notable causes of death were as under:—

Diseases	No. of Deaths 1926	No. of Deaths 1927	Rate per ‰ living 1926	Rate per ‰ living 1927
Malaria and malarial cachexia	1,842	2,095	4.6	5.26
Pneumonia and broncho-pneumonia	850	869	2.1	2.18
Influenza	389	465	.9	1.16
Diseases of early infancy	964	1,003	2.4	2.51
Pulmonary tuberculosis	768	485	1.9	1.21
Diarrhœa and enteritis	792	914	2.0	2.29
Bronchitis	472	547	1.1	1.37
Old age	278	272	.7	.68
Dysentery	372	342	.9	.85
Albuminuria, Bright's disease, nephritis and uræmia	571	567	1.4	1.42
Debility (over 1 year and under 70)	358	375	.9	.94
Plague	41	5	.1	.01
Heart diseases (organic)	121	150	.3	.37
The puerperal state	229	147	.5	.36

INFANTILE MORTALITY

29. The infantile mortality rate is the number of deaths of infants under one year of age occurring in any year for every thousand live births registered during the same year.

The rate for 1927 was 136.6 ‰ as compared with 120.6 ‰ for 1926.

The deaths under 5 years were distributed as follows:—

	Males	Females	Total
Under 1 year	1,030	848	1,878
1 year and under 2 years	309	332	641
2 years „ 3 „	221	230	451
3 years „ 4 „	107	135	242
4 years „ 5 „	74	92	166
Total under 5 years ...	1,741	1,637	3,378

(b) The grouping of causes of death here followed is that adopted by Registrar General in his annual report, in accordance with the classification adopted by the Registrar General of England, based on the third decennial revision by the International Commission Paris 1920. Influenza, Whooping cough, Tuberculosis are included under General Diseases (Group I).

The following table shows the grouping of those deaths according to the causes inscribed on the death certificates.

Causes of death	Under 1 year	1 to under 5 years
General diseases...	319	633
General diseases not included above	3	6
Diseases of the nervous system and organs of the special senses ...	37	89
Diseases of the circulatory system	2	2
,, ,, respiratory system	235	238
,, ,, digestive system	230	315
Non-venereal diseases of the genito-urinary system and annexa...	1	25
Diseases of the skin and cellular tissue ...	1	5
,, ,, bones and organs of locomotion	...	1
Malformations ...	1	1
Diseases of early infancy	1,003	...
Affections produced by external causes ...	4	25
Ill-defined causes	42	160
All causes ...	1,878	1,500

The distribution of the deaths attributed to the diseases of early infancy and a comparison of these figures with those of 1926 is shown below:—

Designation of diseases and accidents	1926	1927
Infantile atrophy, debility and marasmus ...	925	962
Premature birth ...	22	18
Icterus neonatorum ...	2	4
Atelectasis ...	9	5
Injuries at birth ...	5	9
Diseases of umbilicus, etc. ...	1	4
Other diseases peculiar to early infancy ...	...	1
Total ...	964	1,003

STILL-BIRTHS

30. A Still-birth is defined by the Registrar General as " a child born dead at or after the seventh month of pregnancy."

The number of still-births registered during 1927 is as under—showing a decrease-

District	Males		Females		Total	
	1926	1927	1926	1927	1926	1927
Port Louis ...	85	91	69	80	154	171
Pamplemousses ...	67	58	43	49	110	107
Rivière du Rempart	61	50	54	35	115	85
Flacq ...	105	131	70	67	175	198
Grand Port ...	116	82	92	78	208	160
Savanne ...	71	42	69	42	140	84
Plaines Wilhems ..	138	123	94	116	232	239
Moka ...	80	64	60	69	140	133
Black River ...	21	32	20	18	41	50
Total ...	744	673	571	554	1,315	1,227

It is equivalent to 89.2 °/∞ of live Births, for the same period, as compared with 84.7 °/∞ for 1926.

The still-births are distributed as follows for the two great classes of the population.

	Males	Females	Total
General population ...	156	133	289
Indian population ...	517	421	938
Total ...	673	554	1,227

III.—Hygiene and Sanitation

INSECT BORNE DISEASES

MALARIA

31. The Anti-Malarial work carried out by the Department may best be considered under two headings :

(*a*) *Maintenance*
(*b*) *New Works*

Maintenance

Drains and Canalised Streams upkept.

District	feet
Port Louis	186,331
Pamplemousses	237,885
Rivière du Rempart	21,775
Plaines Wilhems	389,356
Moka	278,257
Flacq	166,200
Savanne	37,454
Black River	68,885
Grand Port	140,983
Total	1,527,126 feet

New Works

The occurrence of three cases of locally contracted malaria at Curepipe, provided the stimulus for a review of the Malaria policy of Government and a decision to undertake a new Anti-Malaria Campaign along the General lines indicated by M. E. Mac Gregor in his report on the Anophelinæ of Mauritius, written after his mission to the Island during 1922–23.

A staff was promptly organised to deal with the situation. The immediate problem was to limit the spread of the infection and remove conditions favourable to its recurrence. A little later the scope of the work was widened by the institution of a survey of the elevated area of the Colony included within the 600 foot contour to find out if any extension had taken place in the range of the anophelines in this area as compared with the distribution ascertained by Mr. Mac Gregor's survey in 1922–23. Fortunately, the services of Mr. S. Gebert, who had assisted Mr. Mac Gregor in his work, were available, and he was seconded for appointment as Assistant Entomologist on the new staff.

Dr. L. G. Barbeau, Government Bacteriologist was placed in charge of operations for the time being, and he was assisted by Mr. L. Naz, M.I.C.E., A.C.G.I., F.S.I., the Sanitary Engineer.

The new campaign was financed with funds derived from the Improvement and Development Fund. The Staff consisted of 1 Director, 1 Assistant Entomologist, 1 Clerk, 8 moustiquiers, 2 oiling men and a variable number of labourers. The Sanitary Engineer's services were co-opted as required. The moustiquiers and oilers were later increased to 18 and 3 respectively.

A survey was made of the town of Curepipe, leading to the discovery of breeding places of A. costalis and A. maculipalpis both in and immediately outside of the town limits. A certain amount of work was immediately undertaken to abate the mosquito nuisances amenable to treatment, but the key to the position was found to be the Rivière du Mesnil, which acted as the natural drainage outlet of the waterlogged area in which many breeding places were found. The river was found to lack sufficient gradient to allow of proper drainage of the land in question and the work of regrading the river bed was put in hand.

On the completion of the anopheline survey of Curepipe and its environs about the middle of May—a resurvey was made of the area of the Island lying above the 600 foot contour. It was in this area that Mr. Mc Gregor discovered the so-called inland winter refuges—i.e., permanent collections of water in which anophelines bred all through the cold season. Notable differences were found.

Thus, the number of breeding places of A. costalis was much greater, and their distribution wider, while A. maculipalpis and funestus were discovered in Curepipe itself. Some of these refuges were seen to need comparatively simple measures for their eradication, and by the end of the year, about a quarter of the whole had been obliterated.

Engineering surveys were made for the estimate of the cost of abating the larger nuisances.

The work carried out by the Anti-Malaria (1927) Service may be summarised as follows :

Situation	Marshes, depressions, etc., filled in	Drains constructed or reconstd.	Streams cleaned, graded and trained
Curepipe and environs.	18,362 sq. ft. avge depth 3 feet.	24,847 feet	17,879 feet
Other place	16,764 sq. ft. avge depth 3′ 8″	11.350 feet	1.250 feet

PLAGUE.

32. The general measures of plague prevention enforced during 1926 have been maintained. 82,417 rodents have been trapped in the various ditricts as under.

District	Rodents destroyed
Port Louis	55,488
Plaines Wilhems	18,557
Pamplemousses	1,028
Black River	1,809
Grand Port	1,125
Savanne	621
Moka	3,789
	82,417

Rodents Microscopically Examined.

District	Examined	Infected	Infection Rate
Port Louis	40,290	10	.025%
Praines Wilhems	12,392	Nil	Nil
Pamplemousses	1,017	Nil	Nil

In Port Louis the rat-proofing of buildings went on :

PORT LOUIS

Rat-proofing of Buildings.

New buildings : Rooms and shops	Old buildings : Rooms and shops
280	745

Gunny Bag stores were claytonised in Port Louis on 213 occasions as a routine deverminising measure.

HELMINTHIC INFECTIONS.

ANKYLOSTOMIASIS.

33. The Sanitary measures taken for the prevention of Ankylostomiasis have been the extension of the provision of latrines in rural premises. During the past five years 30,890 pit, and 7,588 improved type pail latrines have been constructed by the public as a result of the Soil Sanitation Campaign.

SCHISTOSOMIASIS

34. This condition is still being studied. See the Scientific Section (infra) of this report.

ENTERIC FEVER

35. The cases of this disease were investigated along the usual lines without any clue being obtained regarding the source of the infection. The carrier problem has never been made the subject of a searching local investigation although most of the enteric fever is thought to be derived from human carriers.

GENERAL MEASURES OF SANITATION

Night Soil and Conservancy

36. In Port Louis the work on the Sewerage System was continued. 155 house connections were made to the sewers with an equivalent reduction in the number of pail latrines. The New Mauritius Dock Company, faced with the impossibility of ever having the advantages of the town water-carriage system for their labourers' camp, installed an independent water carriage system, in which the sewage is subject to septic tank treatment and the effluent discharged into the harbour. The apparatus works satisfactorily.

There were still, however, over three thousand pail privies under the care of the Sanitary Department during the greater part of the year. The night soil from these was disposed of by tipping it into the outfall sewer, on the Western side, and into a septic tank on the Eastern side, the effluent from the tank being passed through an aerobic filter before being discharged into a neighbouring watercourse. The transport vehicles were not satisfactory and they were replaced by a local invention in the shape of watertight motor van of special construction. The change was a decided improvement, and it is hoped in due course to employ similar vehicles in other parts of the Colony where pail services are maintained.

The Night Soil Service at Curepipe is also carried out by the Health Department. Some 1010 services are performed there daily on an average.

In other parts of the Colony where pail services exist, the work has been done either by the Local Authority e.g. Rose Hill—Beau Bassin Board of Commissioners, or by Contractors working under Government supervision. The services have been satisfactory upon the whole.

The pit latrine is beginning to develop sanitary features of its own—chiefly in the direction of maintenance. There is still a good deal of spade work to be done in the way of inducing the rural population to use these latrines habitually.

In this connection, the Hookworm Campaign is a great educational factor while the work of the Sanitary Inspector should not be overlooked.

If the rural population could be induced to make a habit of using its pit latrines it would take proper steps for their maintenance. A neglected pit latrine, only occasionally used, is a dangerous thing—possibly more dangerous than occasionally fouled surface soil, but when the pit latrine is brought into regular use, it becomes a definite sanitary asset whose value increases with the degree of intelligence of the users.

Collection and Disposal of Refuse

37. In Port Louis the town refuse, collected daily from all parts of the town, is still being used for the filling in of depressed areas. Port Louis and the chain of villages lying along the main road from Rose Belle to Mahebourg are the only places where the Scavenging Service is carried out by the Sanitary Department. In other places the work is done either by the Local Authority or by Contractors working under the supervision of the Sanitary Department.

Water Supplies

38. It does not appear to have been possible to effect any improvement in the quality of the Grand River North West Water Supply during the year.

The Nicoliere Supply was laid on to a number of places in the Northern Districts which had formerly to depend upon wells. The new supply is a vast improvement on the old.

School Hygiene

39. The children attending the Schools in the Colony are generally neatly dressed and are clean.

In Port Louis, Dr. Keisler examined 4,831 children from a nominal roll of 6,779. The principal conditions which were remarked by him were as follows.

SCHOOL CHILDREN
PORT LOUIS
4,831 examined

	Number	Percentage
Pediculosis	124	2.5
Scabies	35	0.6
Other Skin Diseases	66	1.3
Defective eyesight	67	1.3
Ear Trouble	124	2.5
Tonsils and Adenoids	98	2.02
Bad Teeth	547	11·3
Anaemia	468	9.6
Schistosomiasis	14	0.2
Worm Infection (clinical)	943	19.5
Enlarged spleen	211	4·3

Labour conditions

40. From the reports of the Medical Officers concerned it would appear that the general hygienic conditions under which contracted servants are housed on estates have been generally satisfactory.

There have been no widespread epidemics in the rural areas and the most insidious and important infections from the economic point of view are hookworm infection and malaria, both of which are endemic, and practically widespread.

FOOD IN RELATION TO HEALTH AND DISEASE

Markets and Abattoirs

41. There are 6 public and 7 private Abattoirs in the Colony. The public Abattoirs administered by the Municipality of Port Louis, the Boards of Beau Bassin and Rose Hill and Curepipe are each controlled by a veterinary officer.

The other abattoirs are conducted under the supervision of the Sanitary staff.

The quality of the public milk supply is controlled by the Medical and Health Department. In Port Louis a great improvement appears to have taken place—out of 337 samples 2.65% having been sophisticated.

Anexure A gives the details of action taken with reference to other types of food.

Measures taken to spread the knowledge of Hygiene and Sanitation

42. Drs. d'Arifat and Barbeau, in conducting the Hookworm and anti-malarial campaigns respectively, give public lectures and talks on hygiene and sanitation. The cinema is also used in connection with these campaigns as well as in the Anti-Tuberculosis Campaign conducted by Dr. Anderson. There can be little doubt that these activities have had a beneficial effect in stimulating the public interest in the art of keeping well.

Hygiene forms an integral part of the instruction in primary and secondary schools—but there is still a tendency to talk it instead of to live it. There is little use in describing the evils of soil pollution to the children of a school and of piously exhorting them always to use latrines for the needs of nature while the school latrine continues to be kept in a perfectly nauseating condition.

Training of Sanitary Personnel

43. The Acting Chief Sanitary Inspector gave 25 lectures in Sanitation to the Sanitary Staff during the year. The average attendance of these lectures was 11.

D. RECOMMENDATIONS FOR FUTURE WORK

44. The appointment of a Commission to inquire into the possibility of increasing the efficiency and reducing the cost of this Department and to make recommendations accordingly, naturally precludes the submission of any recommendations in this place.

IV.—Port Health Work and Administration

45. The following table summarises the work done by the Port Sanitary Authority.

Vessels Arriving		Crew Examined		Passengers examined	
Sailing craft	Steamers	Sailing craft	Steamers	Sailing craft	Steamers
24	228	296	18,981	486	3,917

Vessels given pratique on arrival	Vessels given pratique after disinfection	Vessels refusing pratique	Vessels claytonised at request of owners
182	53	17	41

Three cases of measles occurred during the voyage on board the S. S. "Homayun" which arrived at Port Louis on the 19th December. Measles having been declared a contagious and infectious disease by Regulations appearing under Government Notification 301 of 17th November 1923, the ship and passengers were consequently quarantined for 12 days.

V.—Maternity and Child Welfare

46. The work of the Child Welfare Guild, a voluntary association generously supported by Government and by contributions from the De Chazal fund was extended to the Rose Belle area during the year. The Guild issues an Annual Report of its work which obviates any further need for a reference here, excepting to state that the work is well-conceived and well carried out.

The "Œuvre Pasteur de la Goutte de Lait" was established partly by public subscription organised by the Société Médicale de l'Ile Maurice as a memorial of the Anniversary Celebrations of the birth of Pasteur in December 1922, and partly by grants from the Municipality of Port Louis. A combined Ante-Natal Clinic and milk distribution centre was opened on April 18th, the work being modelled upon that of Dr. Dufour's Clinic opened at Fécamp in 1894.

Dr. F. A. Rouget O.B.E. is the Director of the oeuvre and his admirable annual and interim reports show that the work is proving of great benefit to the classes for which it has been established. The oeuvre is in receipt of an annual subsidy from the local Government.

THE MIDWIVES BOARD

47. This board held 21 sittings during the year.

The Board was composed of the following members:

The Director, Medical & Health Department—Chairman
The Honourable Dr. E. Laurent
Dr. F. L. de Chazal C.B.E.
Dr. F. J. R. Momplé—Medical Officer of Health for Plaines Wilhems.
Dr. F. A. Rouget, O.B.E.—Medical Superintendent, Civil Hospital.

24 applications for registration were considered and the Board being satisfied that the applicants were of good character and otherwise eligible ordered that their names be entered on the Register of Midwives.

16 candidates were selected for training as Midwives in the different hospitals in the Colony. On August 24th and 26th the Board held an examination for the award of certificates as 2nd Class Midwives; out of 15 candidates 11 succeeded in obtaining their certificates.

216 applications for registration as Labour Attendants were received from women stated to have been in practice before the enactment of the new legislation. Each applicant was interviewed by the Board, and it was decided to allow the applicants to be registered as labour attendants until such time as a sufficient number of qualified midwives would be available to replace them. The applicants were mostly of the dai class.

The Board drafted Regulations for the training and examination of Midwives which were published under G.N. 180 of the 30th July 1927. The Regulations provided for two classes of midwife. The first class for literate persons of a good general education, the second class for women illiterate or uneducated but of known respectability and capacity. The policy of the Board is naturally to encourage the training of Midwives of the first class rather than those of the second, but local conditions make the recognition of a second class indispensible in the meantime.

VI.—Hospitals

48. The work of the hospitals is summarised in Appendices I and IV.

VII.—Prisons and Reformatories

49. There are two prisons in the Colony. Port Louis and Beau Bassin, and one reformatory at Beau Bassin.

The health of the prisoners has been good and there have been no epidemics. The Sanitary state of the prisons has been satisfactory and well maintained throughout the year.

The sick rate for Beau Bassin prison with a daily average of 327·97 prisoners was 1·17%.

VIII.—Meteorology

50. The Director of the Observatory has kindly furnished the following table.

METEOROLOGICAL RETURN FOR THE YEAR 1927

FROM THE RECORDS OF THE ROYAL ALFRED OBSERVATORY 178 FEET ABOVE SEA LEVEL

	Temperature ° C					Humidity	Rainfall	Winds		
Months	Mean of daily minima on grass.	Mean of daily shade Maxima.	Mean of daily shade Minima.	Mean daily range.	Mean.	Mean percentage.	Amount in inches.	Resultant Direction.	Mean recorded Speed M.P.S.	Remarks
January ...	21.8	29.2	23.2	6.0	25.8	80.5	16.38	E. by S.	3.51	Highest wind of year 16.6 Jan. 28th.
February ...	20.1	28.9	23.0	5.9	25.6	82.7	9.90	E. by S.	3.23	
March ...	20.6	27.7	22.9	4.8	25.6	84.0	13.45	E. by S.	4.62	
April ...	18.6	27.2	21.6	5.6	24.1	80.5	3.57	E. by S.	3.55	
May ...	13.6	25.2	18.4	6.8	21.5	77.7	2.30	E.S.E.	3.04	
June ...	11.7	23.9	16.5	7.4	19.8	76.1	1,39	E.S.E.	3.20	Lowest temperature of year 13.0 June 5 & 21, July 6.
July ...	11.9	22.8	15.9	6.9	19.1	74.6	2.09	S.E.	4.23	
August ...	13.6	23.5	17.2	6.3	20.0	77.8	5.50	E.S.E.	3.81	
September ...	13.0	24.2	16.7	7.5	20.2	71.9	1.19	E.S.E.	3.51	
October ...	14.5	26.0	17.8	8.2	21.8	72.2	1.49	E.S.E.	3.50	
November ...	17.9	27.6	20.3	7.3	23.6	73.0	.74	E.S.E.	3.68	
December ...	20.1	29.2	22.1	7.1	25.2	75.2	6.35	E.	3.16	Highest temperature of year 33.1 December 18.
Year...	16.5	26.3	19.6	6.7	22.7	77.2	64.35	E.S.E.	3.57	

51. I wish to thank the Staff of the Department for their valuable co-operation in the work during rather a strenuous year.

J. BALFOUR KIRK,
Director.

IX.—Scientific

(A) ANNUAL REPORT OF THE BACTERIOLOGICAL LABORATORY FOR THE YEAR 1927

The total number of samples and articles examined at the Bacteriological Laboratory during the year 1927 was 8062 as compared with 5077 in 1926. The figures for the last nine years are given below. They bear testimony to the steady growth and importance of this Institution.

In 1919 ... 1279 examinations.
„ 1920 ... 1311 „
„ 1921 ... 1776 „
„ 1922 ... 1850 „
„ 1923 ... 3014 „

In 1924 ... 4012 examinations
„ 1925 ... 5167 „
„ 1926 ... 5077 „
„ 1927 ... 8062 „

The work done in the several divisions of the Laboratory is arranged under the same heads as before for the sake of convenience and to permit of comparison with previous reports.

I.— Clinical

Under this chapter is grouped all work of a clinical nature, bearing on a total of 5177 samples. Of these 366 were cultered and when required tested by inoculation to animals. The materials examined comprised specimens of blood, sputum, pus, throat and nasal swabs, cerebrospinal and other body fluids, faeces, urine, neoplastic growths and pathological secretions and excretions.

(1) Blood. 2599 samples were received as compared with 1896 in 1926.

(a) *Malaria.*—210 smears were examined for malarial parasites with findings in 24 cases.

The three varieties of haematozoa were found to occur in the following proportions:—

Benign tertain in	9	Specimens
Quartan in	4	,,
Subtertian in	11	,,

This cannot, however, be regarded as the true distribution of these parasites in the island as the smears were practically limited to the two districts of Plaines Wilhems and Moka.

(b) *Filariasis.*—Six specimens showed embryos of Filaria bancrofti.

(c) *Typhoid and the Paratyphoid Fevers*—These diseases accounted for 308 samples. Of these 304 were tested for the presence of agglutins by Widal's method with positive results for typhoid fever in 147. Dryer's method was applied in one case with positive results. In four instances where paratyphoid was suspected the blood was tested against laboratory cultures of both Para A and B with negative results; 50 samples were cultered from 7 of which bac. typhosus (Eberth) was isolated: another yielded Para A in pure culture.

(d) *Syphilis.*—1160 Wassermann's complement fixation tests were done with positive results in 289 (25%) and doubtful ones in 10 cases. The method employed is Hecht's modification of Wassermann's original process, in which the complement normally present in human blood is made use of in the final stages of the reaction. The patient's own serum is used for that purpose instead of guinea pig's serum. The complementary (haemolytic) titre of the serum is previously determined in each case. The antigen employed is prepared from ox-heart muscle by extraction with rectified spirit according to the procedure described by Neymann and after passage through ether and acetone. It is standardised before use by testing against a known syphilitic serum and its strength is controlled at short intervals thereafter. As a further precaution its action is also frequently compared with that of another antigen (Bordet's). Fresh antigens are prepared every three months, or earlier if signs of deterioration are observed.

(e) *Tuberculosis.*—Seven samples were tested by Besredka's complement fixation method with positive findings in 6.

(f) *Blood counts.*—101 differential leucocyte counts were made and one red-cell count.

(g) *Urea and Glucose Values.*—These were determined on 150 and 13 samples respectively, the latter in connection with treatment by Insulin.

(h) *Bacteriological examination.* 50 samples were cultured. 8 of these have already been referred to under parag. (c) supra. From one of the other samples a streptococcus and from another b. pyocyaneus were isolated.

(2) Sputum.—562 specimens were examined, mainly for pulmonary tuberculosis with positive findings as to Koch's tubercle bacillus in 75, with or without the help of concentration methods. 158 samples were cultured with a view to the preparation of compound vaccines for the treatment of asthma, resulting in the isolation of pneumococci, strepto and staphylococci, micrococcus catarrhalis, Pfeiffer's influenza bacillus, b. capsulatus, b. septus and an unindentified diphtheroid bacillus.

These organisms were found in more or less complex associations.

(3) Throat and Nasal Swabs were received on 178 occasions against 211 in 1926, either for diagnostic purposes or for the detection of diphtheria carriers among contacts and convalescents. Culture on solidified ox-serum is the rule. The Klebs-Loeffler bacillus was recovered from 44 swabs while 15 showed Vincent's fusiform organism, 15 Hofmann's bacillus and four (mucus from nose) Hansen's bacillus leprae.

(4) Pus.—Number of specimens 224, derived from various sources viz.: urethral or vaginal discharges, boils, acne pustules and purulent collections from divers locations. Gonococci were found in 27 of the former, Koch's tubercle bacillus in one of the others, pneumococci in 2, b. coli communis in 5, b. diffluens in 1, b. coli communior in 1, while the diphtheroid organism mentioned in the previous year's report as not unfrequently present in post-influenzal suppurations was found in 10 cases.

(5) Cerebrospinad Fluid.— 83 samples examined as follows:—

Leucocyte count	27	samples.
Differential count	19	,,
Nonne-Appelt test	15	,,
Albumen value	11	,,
Glucose value	1	,,
Simple microscopical examination	4	,,
Wassermann's reaction for syphilis with six positives ...	26	,,

Of the 7 specimens that were cultured one gave Pfeiffer's bacillus influenzae, another a pure culture of enterococcus, while the remaining five proved sterile.

(6) Pleuritic Fluid.—Five specimens were examined, with negative results in three cases. The other two yielded a staphylococcus on culture.

(7) Prostatic Secretion.—Three samples were cultured from two of which staphylococci were isolated.

(8) Gastric Juice.—A specimen was chemically analysed.

(9) Synovial Fluid.—Three samples of knee tappings, all sterile on bacteriological examination.

(10) Hydrocele Fluid.—A sample wassermanned. Reaction negative.

(11) Uterine and Vaginal Discharges.—Smears or swabs were received in 15 cases. In two of these (vulvar diphtheria) the Klebs-Loeffler bacillus was demonstrated; in two of vaginal catarrh the diphtheroid bacillus referred to in (4) was found associated with cocci and in two other cases (uterine swabs) b. coli was recovered in association with streptococci.

(12) Conjunctival and Lachrymal Secretions.—4 specimens. Cultures made in two cases. From one streptococci were grown and from the other staphylococci associated with b. xerosis.

(13) Ulcer Scrapings.—Examined in one case for treponema pallidum with negative findings.

(14) Entozoa.—A worm stated to have been removed from the lachrymal sac of a patient was received for identification and proved to be a young Ascaris.

(15) Faeces.—Total number of specimens 911, in 121 of which amoebae were found: Ent. histolytica in 69, am. coli in 52. A large variety of other parasites or their eggs were also discovered in the course of these examinations viz.:

Trichuris trichiura in	707	specimens
Ascaris lumbricoides in	231	,,
Blastocystis hominis in	214	,,
Hookworm in	157	,,
Giardia intestinalis in	67	,,
Trichomonas in	20	,,
Strongyloides in	16	,,
Tetramitus Mesnili in	9	,,
Oxyuris in	4	,,
Enteromonas in	2	,,
Cercomonas in	1	,,
Davainea Madagascariensis in ...	1	,,

Nine samples were cultured. The following were among the organisms isolated:—

Paratyphoid C in	2	cases
Bac. Dysenteriæ Y in	1	case
Lactose fermenters (unidentified) in ...	2	cases
B. Morgani in...	1	case
B. pseudo-asiaticus (Castellani) in ...	1	,,

In one case Weber's test for occult blood was applied with success.

A noteworthy feature of these findings is the steadily increasing frequency with which blastocysts are found to be present in the pathological specimens of human faces received for examination at this Institution. Whereas a few years back this organism was only very occasionally met with, it now holds the third place in order of frequency among the intestinal parasites present in the specimens examined. A further reference is made to this parasite in Chapter V.

(16) Urine.—552 analyses were made. Most of these consisted in the usual routine procedures, chemical and microscopical, but in 138 cases the centrifuged sediments of samples collected with aseptic precautions were cultured with the following results:—

Bac. Coli Communior	was recorded	from	15	samples
Bac. Coli Communis	,,	,,	12	,,
Streptococci	,,	,,	11	,,
Staphylococci	,,	,,	9	,,
B. Typhosus (Eberth)	,,	,,	2	,,
B. Paratyphoid A	,,	,,	2	,,
B. Paratyphoid C	,,	,,	1	,,
B. Pyocyaneus	,,	,,	2	,,
B. Diffluens	,,	,,	2	,,
B. Lactici Acidi	,,	,,	2	,,
Mic. Catarrhalis	,,	,,	1	,,
Gonococci	,,	,,	1	,,
B. Foetidus	,,	,,	1	,,
B. Lactis Aerogenes	,,	,,	1	,,

Microscopical examination of the centrifuged sediment also showed :—

Hyaline casts in	48 specimens
Granular casts in	27 ,,
Cellular casts in	2 ,,
Eggs of Schistosomun hæmatobium in	29 ,,
Gonococci in	1 ,,

(17) Organs and Pathological growths.—Sections were cut of 34 specimens. They consisted of :—

Scirrhus cancer of the breast	5
Chronic mastitis	1
Adenoma of the breast	4
Adenoma of the breast (tending to malignancy)	1
Mixed sarcoma of the Scrotum	1
Round-celled sarcoma of the thigh	1
Melanotic sarcoma of the skin of the back	1
Sarcoma of inguinal gland	1
Large round-celled sarcoma of the testicle	1
Round-celled sarcoma of the penis	1
Adeno-carcinoma of lower lip	1
Squamous epithelioma of lower jaw	1
Squamous epithelioma of eyelid	1
Tubercle of testicle	1
Simple uterine fibroma	1
Colloid cancer of uterus	1
Brain tumour (Bilharzial)	1
Chronic appendicitis	2
Bilharzial appendicitis	1
Fibroma of abdominal wall	1
Bilharzial growth from vagina	1
Tonsilitis	1
Abscess wall following quinine injection	1
Piece of kidney—acute congestion	1
Piece of liver—fatty degeneration	1
Piece of skin of toe—sarcopsylla penetrans	1

II.—Vaccines

A. *Prophylactic vaccines.*—Antityphoid prophylactic vaccine (Wright-Leishman's) was prepared every three months and issued free. The demand was very small only 223 persons having taken advantage of the facilities placed at their disposal.

On the other hand Calmette's B.C.G. vaccine against infantile tuberculosis has been in increasing demand. The number of infants vaccinated in 1927 rose to 1,546 against 792 in 1926, bringing the total number to 2,400 since the practice was commenced in 1925. The subject is more fully dealt with in Chapter V.

B. *Therapeutic vaccines.*—The number of auto-vaccines prepared during the year was 190. They were made with microorganisms isolated in the laboratory from pathological materials collected with aseptic precautions and comprised the following :—

From blood with b. pyocyaneus, b. typhosus, streptococci, and paratyphoid A ; 6 vaccines.

From urine with b. coli communior, b. coli communis, streptococci, b. lactici acidi, paratyphosus A, gonococci, b. diffluens, b. asiaticus, b. diphtheroideus, b. lactis aerogenes, b. typhosus, b. pyogenes fœtidus, b. pyocyaneus and b. ærtryche ; 48 vaccines.

From pus with streptococci, staphylococci, b. diphtheroideus, acne bacillus, b. coli communis, gonococci and pneumooci ; 59 vaccines.

From sputum with pneumococci, streptococci, staphylococci, b influenzae, mic. catarrhalis, b. capsulatus, b. septus and b. diphtheroideus ; 72 vaccines.

From lachrymal secretion with streptococci ; 1 vaccine

From conjunctival secretion with b. xerosis and staphylococci ; 1 vaccine.

From pleuritic fluid with staphylococci ; 1 vaccine.

From uterine discharge with streptococci and b· coli communis ; 1 vaccine.

From prostatic secretion with staphylococci ; 1 vaccine.

The principal feature of the year's work in that branch of the Laboratory activities was the preparation of compound vaccines for the treatment of catarrhal conditions especially of the bronchial and urinary passages.

The preparation of filtered vaccines from stock cultures of pyogenic organisms was continued and met with a fair demand. Filtered auto-vaccines were also prepared on four occasions with b. aertryche (once), b. coli communis (twice) and lactic aerogenes (once).

III.—Public Health

A total of 867 samples of foods, drinks and drugs were analysed in the chemistry division during the period under review, an increase of 31 as compared with the figures for 1926. The standard of work of that division has been fully maintained and the calls under this head have proved a heavy tax on the time and energy of the staff.

The following samples of foods and drugs were received for analysis and report:—

	No. of Samples	No. of cases	From whom received
Milk	847	847	Sanitary authorities, Law Courts and Government Institutions.
Gandia	4	3	Police and Revenue Officers.
Opium	7	2	Police.
Cider	1	1	Revenue Department.
Beer	1	1	,, ,,
Yeast	1	1	,, ,,
Wine	1	1	Customs ,,
Chocolate	1	1	Health ,,
Rum	3	3	Police and Revenue Officers.
Syrup	1	1	Revenue Department.

In addition 14 samples of water were bacteriologically examined. Thirteen of these came from the Mare-aux-Vacoas, the water of which is periodically tested after filtration. The fourteenth examination was undertaken at the request of the Manager of a sugar estate of Savanne district, to ascertain the degree of suitability of a given spring as a source of supply for the estate labourers.

The remark made in the previous years' report applies with equal correctness to the samples of milk analysed in 1927 when analysis showed such a close approximation to the legal standards of 2.5% fat and 8.5% other solids as strongly to suggest a successful adjustment of the constants so as to evade prosecution under the law. The other examinations mentioned in this chapter presented no special peculiarities.

Smears from a dead rat were examined for a district Sanitary Authority but proved negative as to plague.

IV.—Medico-Legal.

The articles of evidence, organs, materials etc. referred for examination by the Judicial Authorities at the request of the Police and other Government Departments amounted to 283 against 272 and 240 in 1926 and 1925 respectively showing the steady rise that is taking place in this direction also in the calls upon this Institution. The figures for the last seven years stand as follows:—

1921	148 articles.	1925	240 articles.
1922	179 ,,	1926	272 ,,
1923	180 ,,	1927	283 ,,
1924	125 ,,		

These examinations were required in connection with the following offences:—

Rape	110 articles	in 20 cases
Murder or attempt at	68 ,,	12 ,,
Poisoning	43 ,,	12 ,,
Illicit distillation	32 ,,	22 ,,
Sodomy	7 ,,	2 ,,
Bestiality	4 ,,	1 ,,
Mutilation of genitals	6 ,,	1 ,,
Homicide	2 ,,	2 ,,
Fraudulent sale (deceiving purchaser)	2 ,,	1 ,,
Arson	3 ,,	1 ,,
Larceny with breaking	1 ,,	1 ,,
Wounds and blows	5 ,,	1 ,,

Examinations for Rape and murder headed the list as usual.

The precipitin test was applied with success in one case in establishing the human origin of blood stains on the fore lights of a motor car suspected to have been the cause of an accident with loss of life.

V.—Research

1. CALMETTE'S B.C.G. VACCINE.—To meet the increasing demand for this vaccine for the protection both of infants and young bovines against tuberculosis, arrangements were made during the year for the preparation of that prophylactic on an extended scale. In co-operation with the Department of Agriculture and at the request of stock-breeders the method was applied to the vaccination of over 400 new born calves. It is no doubt too early to judge of the results but it is worthy of remark that the inoculation of live cultures of avirulent Calmette-Guerin bacilli has so far been well borne by the young animals. No

inconvenience seems to result and an enthusiastic breeder even affirms that his vaccinated calves have shown heightened resistance to weather conditions. This is specially interesting when compared with the fact that the death-rate from all causes of unvaccinated children was higher during the period September 1925 to December 1927 than that of vaccinated children of similar age.

The subject is more fully dealt with in a report hereto attached from Mr. Maya, Asst. Bacteriologist, who is in special charge of that work.

2. Ph. VALUES OF ANOPHELINE BREEDING WATERS.—As a contribution to the new anti-malarial campaign undertaken on the lines of Mr. MacGregor's report readings were taken of the values of the number of anopheline breeding places in various parts of the Island and under widely different conditions of climate and environment. The investigation was undertaken with the object of ascertaining whether the chemical reaction of the waters of Mauritius afforded information as to their suitability or otherwise for anopheline breeding. When the year came to a close some fifty waters in which malaria—bearing anophelines were found actually to breed had been tested with results which are likely to prove useful in future antimosquito work if their correctness is confirmed by subsequent researches. So far the information obtained went to show that Anopheles costalis and A. maculipalpis breed in alkaline waters or occasionally in waters with a slightly acid, verging on neutral, reaction; the former in waters of pH 7.7 to 9.8 and higher (exceptionally in waters with pH 6.9 *to* 7.2); the latter in waters with pH 7.0 to 7.7 On the other hand Anopheles funestus larvæ were usually found in waters with a pH on the acid side and only exceptionally in waters near the neutral point (pH 6.9 to 7.1).

3. BILHARZIASIS.—A sustained effort was again made in 1927 to identify the local intermediate host of Schistosomun haematobium. 1670 fresh water snails were dissected but although cercaria of three different kinds were found in some of them none presented the characteristics assigned by Leper to the cercaria of the worm named after Bilharz. The molluscs were obtained from a section of Plaines Wilhems River bordering on the town of Rose Hill, a river the waters of which are believed to be heavily infested. The snails were of three different kinds and as will appear from the following table presented unequal degrees of liability to infection as well as a certain specific affinity for different cercaria.

Snails	No· of snails dissected	No. of snails infested	Cercaria		
			No. 1	No. II	No. III
Limnea Mauritiana	770	37	27	...	10
Melania Tuberculata	600	15	...	15	...
Paludina Vivipara	300	0	...	...	...

The species of trematodes to which these cercaria belong have not been accurately determined nor have their definitive hosts been discovered. On no occasion have snails been found to harbour two species of cercaria at the same time. All these cercaria had non-bifid tails and possessed a pharynx. Cercaria No. I (first described by Student L. Cantin in special charge of this work) encysts in the gills of bull-frog tadpoles and is developed from sausage-shaped sporocysts. Cercaria No. II developes from rediae and becomes rapidly encysted on the slide. Cercaria No. III developes from sporocysts like No. I and possibly belongs to the group of the ecchinostomes.

Attention has been drawn in previous reports to certain abnormal localisations of bilharzial growths. It is now a matter of current knowledge that such growths are not uncommon in the vagina and around the cervix uteri but eggs of S haematobium were discovered during the year 1927 in the vermiform appendix removed from a patient of Moka Hospital operated on for appendicitis and in a tumour of carcinomatous appearance excised from the lower bowel in another case. In these cases only eggs with terminal spines were found for it may be mentioned that S. Mansoni and S. Japonicum have never yet been seen in Mauritius. Lastly, appearances suggestive of the same eggs were seen in a specimen of cerebral growth also from Moka Hospital. None of these patients had shown any bilharzial manifestations and their urine and stools examined before and after operation showed no indication of Schistosomum infestation. In the appendix (2 more have since been received showing the same condition) the eggs were well preserved and arranged in groups in the submucosa or scattered in the lymphoid follicles. Under the peritoneal covering, the larger of these groups formed small nodular projections of the size of a pin's head not unlike tubercle. These findings point to the possibility of some at least of the cases of appendicitis of such frequent occurrence in Mauritius being of bilharzial origin as is believed to be the case in South Africa by Dr. Harvey Pirie (paper published in the Transactions of the Royal Society of Tropical Medicine and Hygiene 1924 Vol. XVIII No. 4 p. 210). The investigation into this aspect of the subject is being continued and the search for the intermediate host is being directed on new lines.

4. Blastocystis Hominis.—In view of the increasing frequency with which this parasite is met with in Mauritius, an investigation was instituted with the cooperation and under the special charge of Mr. L. Webb, Scientific Assistant, into the biology and pathology of the organism and the treatment of the condition it is apparently capable of giving rise to. Although it is generally stated in text books to be innocuous the parasite in question is often associated in our experience with a relapsing form of diarrhoea accompanied with

moderate pain, flatulence and diffuse abdominal tenderness. The motions are profuse, permeated with gas and occasionally glairy and blood-stained like dysenteric stools. The parasites may be present in enormous numbers to the exclusion of other intestinal protozoa. Amoebae are absent. The blastocysts may disappear under treatment concurrently with an improvement in the abdominal symptons but they are very apt to reappear in the stools in the course of repeated relapses usually at intervals of a few weeks. There is no fever and no deaths have been recorded but the manifestations are rather intractable and productive of much physical and mental depression.

The parasite has been successfully cultured on Boeck and Dhorblav egg medium.

A search for carriers led to the discovery of the parasite in the bullfrog (Bufo regularis) as well as in poultry. The former of recent introduction in the Colony where it has multiplied to an enormous extent, might be suspected of having imported the parasite had not the latter been observed at this Institution several years before the advent ot the toad. On the other hand it is suggested that poultry may act as reservoirs and be active in the dissemination of the disease. Infection appears to be wide-spread among fowls and ducks many of which succumb in early life from no other discoverable cause. The parasite is voided with the faeces and may possibly pass to human beings through the agency of flies or dust. No insect carrier has been found as yet.

Sick birds pass pasty dark-green stools with opaque white mucus. After death there is intestinal congestion and general emaciation and cachexia. The blastocysts are found exclusively in the lower bowel. Should this localisation be the same in the human subject the failure of the usual remedies in the treatment of this condition would be accounted for and the use of rectal injections seems worth a thorough trial. The drugs that have been found most reliable by the mouth in the treatment of human cases are stovarsol and yatren, the latter given in full doses. Under this treatment the parasites usually disappear in a few days to reappear, as already stated, usually after a quiescent period, with the return of the clinical manifestations. Stovarsol swallowed in doses of 1/32 to 1/8 of a grain in watery solution proved effective in the treatment of infected fowls. The drug is well borne by the birds in these doses and no symptoms of neuritis have been observed.

5. GLUCOSE VALUES.—The use of Insulin in the treatment of diabetic conditions led to a demand from medical practitioners for prompt and accurate information on the glucose contents of blood samples sent to the Laboratory. Experience having shown that the colorimetric method known as that of Folin-Wu was best adapted to the working conditions under which we are placed, that method has accordingly been adopted. A Dubosc colorimeter is used. Results at variance with clinical facts having been recorded here as elsewhere readings were taken from samples of blood (human and rabbit's) immediately after bleeding and at intervals thereafter. A few illustrative examples of the findings are given in the subjoined table.

Blood	Glucose value within 10 minutes	After 3 hrs.	After 6 hrs.	After 24 hrs.	Loss in 24 hrs.
Rabbit's ...	0.950 gram. p. lit.	0.760 ‰	...	0.685 ‰	0.265 ‰
Human ...	0.905 ,,	0.785 ‰	0.780 ‰	0.595 ‰	0.310 ‰
Human ...	0.820 ,,	...	...	0.629 ‰	0.191 ‰

The results showed that the percentage of glucose in the samples fell rapidly from the time of collection and that if correct values were to be looked for the samples should be tested within the least possible delay. The ideal method would therefore consist in an examination at the patient's bedside but the practical difficulties in the way being considerable another course was adopted which has proved both practical and reliable. This consists in the use of a mixture of fluoride of sodium and phosphate of potassium which reduces glycolysis in the blood to a negligible quantity during the first two hours. The mixture is supplied from the laboratory to medical practitioners on application. The blood is received direct from a vein into a tube containing the mixed salts and despatched so as to reach the laboratory within two hours of bleeding. It is recommended that the samples be drawn in the morning and after a period of abstinence from food.

The adaptability of the method of Folin-Wu to the estimation of glucose in cerebrospinal fluid was studied by Mr. Avice du Buisson, Assistant chemist. It was found that, under local conditions at any rate and in our hands, the method could only be trusted if a cupric solution of distinctly higher alkalinity was employed than that used in the case of blood samples. If this precaution is taken i.e. if a copper solution clearly alkaline to litmus is used the results obtained with the Folin-Wu appear as reliable for cerebrospinal fluid as for blood.

6. The recommendation made by Dr. Andrew Balfour during his all too short visit that the laboratory should be on the look out for Clonorchiasis specially among the Chinese population of the colony has never been lost sight of. As a collateral investigation a study has been commenced of the parasites of edible fishes which led to the discovery by Mr. L. Webb in 1927 in the alimentary canal of a salt-water fish (Rhombotidus triostegus, Bleeker, locally known as "cordonnier") of very common occurence in Mauritian waters and consumed by all classes, of a worm of the order Acantocephala, family echinorynchidae, closely resembling the worm found by T. Southwell (Annals of Tropical Medicine and Parasitology, July 22nd 1927) in marine fish along the coasts of Ceylon and named by him Oligoterorynchus.

Trichomonads similar in every respect to those present in the human intestine were also found during the year in the alimentary canal of chickens. In one case the protozoa were present in large numbers in a serpigenous ulceration of the anus which healed up when they were got rid of.

VI.—Administration

The creation of a Special Malaria Service as a first step in the application of Mr. Mac Gregor's recommendations for a revised anti-malarial organisation led to Mr. Gébert, Scientific Assistant, being seconded for duty as Assistant Entomologist. The post of Scientific Assistant was filled by Mr. Lewis Webb, Microscopist.

Laboratory fees collected at the laboratory irrespective of amounts paid at the Treasury or District Cashier's Offices, for work done at this Institution on behalf of private parties, totalled Rs. 8,265.47. It may be mentioned in that connection that the tariff of laboratory charges was revised during the year. The revised regulations include certain new items permitting of charges being made for the sale of filtered vaccines, for Besredka's complement fixation test, etc., but they also provide for the payment of reduced charges for laboratory examinations by Government servants and pensioners as well as their dependents, a provision which has operated towards a diminution in the receipts of the Institution.

L. G. BARBEAU,
Superintendent Bact. Lab.

Réduit,
June, 29th 1928.

ANNEXURE I.

B. C. G. VACCINATION AGAINST TUBERCULOSIS.

The preparation of B.C.G. vaccine was started on September 1st 1925.

The original culture employed in the preparation of the vaccine was kindly supplied by Professor Calmette, at the time of my stay at the " Institut Pasteur " of Paris in 1924.

The strain is maintained on potato and on veal broth containing 5% glycerine, also on Sauton's medium. To make sure that it is not recovering its virulence, a test is made every three months on guinea pigs.

The vaccine is prepared once, sometimes twice a week, according to requirements, according to Professor Calmette's technique.

I am indebted to Mr. Negre, Professor Calmette's assistant in charge of the preparation of this vaccine, for the necessary particulars concerning the technique for cultures, the preparation and preservation of vaccinal emulsions, and the methods of control.

I wish to place on record my gratefulness to Mr. Negre.

The vaccine is supplied free of charge when applied for by medical men. The consignments bear an indication as to the date beyond which the last dose should not be employed—this corresponds to the 10th day after the date of preparation.

Printed directions for use are attached to every consignment.

After a year, an appropriate questionnaire is sent to all doctors having used the vaccine.

No difficulty is experienced in getting parents to agree to B. C. G. vaccination, and the method is being adopted generally without opposition. Up to now no accident or complications, neither immediate nor remote, have been recorded on new-born infants thus vaccinated.

From September 1st 1925 to December 31st 1927, 2,400 new-born infants were vaccinated as under :—

In 1925 (4 months)	62
1926	792
1927	1,546

The figure is annually increasing and the number of children vaccinated in 1927 is approximately twice the figure for 1926.

Up to March 1927, 1084 children had been vaccinated throughout the island and no complications attributable to this vaccination could be traced.

Out of the 36 medical men to whom the vaccine was sent, 27 were good enough to return duly filled in, the forms we sent them.

Their cooperation is very much appreciated and we have pleasure in tendering them our grateful thanks.

Their observations are based on 787 children, actually vaccinated by them. Growth was normal for the period covered by the observations *and there was no death due to tuberculosis.*

32 deaths were reported due to the following divers causes :—

Acute enteritis	5
Bronchitis	3
Broncho-pneumonia	2
Diarrhea & general debility	16
Gastro-enteritis	3
Congenital syphilis	2
Meningitis (typhoid)	1

The death-rate was 4% for the 787 vaccinated children who have been watched from September 1925 to March 1927.

On the other hand, the general death rate for children of the same age, during the first 19 months following birth, was 11.9% for the period 1.9.25 to 31.3.27.

Among the vaccinated children, 28 were in contact with bacilliferous parents. Four of them died of causes other than tuberculosis.

One on the 16th day after birth, of congenitial syphilis; another on the 28th day of diarrhea (born a weakling); a third at the end of a month of general debility and the fourth at 7 months of debility and diarrhea.

The remaining 24 are growing normally, in spite of insanitary surroundings, and in some cases, of conditions favourable to the spread of the disease.

We must also mention that the vaccination of Bovidae by means of B.C.G. has been extended to a certain extent. From July 16th to December 31st 1927, 419 calves were subjected to preventive inoculation by Mr. F. E. Lionnet, Veterinary Surgeon (Alfort), attached to the staff of the Mauritius Agricultural Department. We are not now in a position to express an opinion on the results obtained, but we can safely say that vaccination has in no way interfered with the growth of the young animals, and that the calves stood it very well.

PREPARATION OF B.C.G. CULTURES

B.C.G. cultures should be renewed by carriage to fresh media every 20 days, or every 25 days at latest. The tubes should be kept in a sloping position, *in an incubator correctly adjusted to 38° C*; they should be inclined at an angle of about 15°, in such a way that only the lower end of the potato remains in contact with the broth.

It is advisable, for the preparation of the potatoes, to soak the pieces, cut with a punch, in a solution of sodium carbonate containing 10 grams per litre. They are dried on linen and subesequently placed in Roux tubes the lower part of which should be filled with veal broth containing 5% glycerine, the pH of the broth being adjusted to 7.2. Then sterilized for 30 minutes at 120° C and the tubes placed in the incubator for at least three days, as a check.

Inoculation should be freely performed by spreading some of the growth and grinding it gently over the whole surface of the potato with a platinum, or pure nickel, spatula kept *exclusively for the purpose.*

This being done, the caps are put on and the tubes kept at 38° C to be used when required.

After 20 days, the culture has sufficiently developed to be used in the preparation of vaccinal emulsions.

Cultures more than 25 days' old should not be employed as the organisms begin to decrease in number after that time.

It is absolutely necessary that the emulsion should contain the greatest possible number of living organisms, with a minimum of dead or degenerate elements.

In order that the B.C.G. culture should preserve its essential bio-chemical properties, it is necessary after 10 consecutive growths on the usual glycerine-broth media, to make two or three successive transfers on potatoes stewed in pure ox-bile prepared as under:—

The contents of several gall-bladders from slaughtered cattle are collected in a flask. The gall-bladders should be as fresh as possible. Sterilize at 120° C. for 30 minutes and keep the flask at rest for about 3 weeks at room temperature.

A brick-red deposit is formed, which is separated by filtration through filter paper, just before use.

Pieces of potato chipped off with a punch are completely immersed in the bile, to which 5% glycerine has been added. The whole is then brought to a temperature of 75° C. for 3 hours on a water bath.

The potato chips are allowed to drain, and are then transferred to Buchner tubes, filled up to the constriction with pure bile containing 5% glycerine. Sterilise for 30 minutes at 120° C.

If the inoculation is made freely by grinding the original growth gently and carefully over the whole surface of the potato, B. C. G. will grow rapidly and the growths will present a peculiar aspect recalling in no way that of the normal cultures on potato-glycerine.

As early as 10 days at 38°, the whole surface becomes covered with a thin cream-like layer, greenish-grey in colour, which goes on thickening up to the 25th day.

At this stage the potato is covered with a shiny coating, of uniform appearance, cream coloured, recalling an old culture of glanders.

The amount of bacilli which can be obtained from a single potato tube is approximately 0 gr. 600 (weighed moist, after pressing between double sheets of blotting paper).

The bacilli so obtained are granular, thin, and longer than on the usual media. They retain the same properties, as regards staining with Ziehl.

After 2 or 3 transfers on this medium, thanks to which it has been possible to obtain the B. C. G. strain, the culture is started anew on potato-glycerine, when it regains the normal T. B. aspect. From potato-glycerine, transfers may be made on the various solid or liquid media, without running the risk of seeing the B. C. G. regain its virulence.

For the preparation of vaccinal emulsions, large quantities of bacilli are required, and liquid culture media are therefore preferable; but beef broth containing peptone and glycerine, as well as bouillons containing potato pulp, do not give satisfactory results with B. C. G. Their composition is much too unstable.

Amongst synthetic media, there is one which has given very satisfactory results. This is Sauton's medium, the composition of which is given below:—

Asparagine	6	grams
Pure glycerine	60	,,
Citric acid	2	,,
Dipotassium Phosphate	0.5	,,
Magnesium Sulphate	0.5	,,
Ammon. Citrate of iron	0.05	,,
Distilled water	940	,,

After the solution has been made up, its pH is corrected to 7.2, using pure ammonia. It is then transferred by fractions of 150c.c. to 250c.c. flasks and subsequently sterilized once ot 120° C. for 20 minutes

Surface inoculation is performed by means of the film obtained from a culture on the usual potato-glycerine bouillon.

Growth is very rapid at 38° C. in the incubator; it reaches its maximum development in 2 weeks, but the film increases in thickness right up to the fourth week. At this stage the weight of organisms per flask is over 5 grammes.

The growth is transferred to a funnel provided with sterile Berzelius filter paper; the funnel is connected to a filter pump and fitted with a paper cap.

Moisture is removed by pressure between several sheets of sterile filter paper and the bacilli are weighed after transfer aseptically, by means of a spatula into a small sterile platinum or pure nickel basin, provided with a lid.

Every centigramme of fresh culture contains roughly 400 million bacilli, and constitutes one of the three doses given by the mouth to new-born infants. For a young calf the dose is .05 gramme given at one time. This corresponds to 2 thousand million bacilli, which should be injected into the sub-cutaneous cellular tissue of the dewlap (or fold of skin that hangs from the throat).

Preparation and Preservation of Vaccinal Emulsions.

The cultures collected, dried and weighed as explained above are placed in a sterile flask, of thick glass, containing sterile glass beads 5 m/m in diameter.

This flask which contains a small quantity of preservative fluid, is skaken for 10–15 minutes, to break up clots. The volume is then adjusted in order to bring the dilution to a concentration of *1 centigramme of growth for every 2 c.c.*

When the emulsion is complete and no clots are visible, it is transferred, using a sterile syphon, into a special container which permits of the aseptic distribution in phials containing doses of 1 centigramme (or 2 c.c.) for infants. These are immediately sealed over a spirit lamp.

The liquid used for dilution has the following composition:

Pure glycerine	40	grammes	This liquid should be sterilized at 120° C. for 20 Minutes
Pure glucose	10	,,	
Distilled water	1000	,,	

Sauton's medium can just as well be used, if diluted down to 25% normal strength and sterilized. Both liquids preserve the vitality of the bacilli very well.

For vaccination purposes, it is advisable not to employ emulsions more than 10 days old. If this condition is not fulfilled, infants are liable to receive too small a dose of live organisms and a correspondingly heavy dose of dead bacilli.

But we know that only live germs are capable of imparting to the child durable resistance towards re-infection. This is why it is distinctly stated in the instructions accompanying B. C. G. preparations, that the doses should be made use of within *10 days* of the date on which they are sent out.

N. B. We cannot too strongly recommend that every care be taken to avoid acccidental contamination of cultures or of laboratory animals by virulent strains of T. B. originating from other cultures or other animals. The same precaution should be exercised as regards contamination with pseudo-T. B. cocco-bacilli.

In order to minimise the chances of contamination, a special Laboratory room should be kept exclusively for B. C. G. work and the instruments used in this Section should under no circumstances be used for any other purpose.

The incubator set aside for B. C. G. work must not be used for any other culture, *especially T. B. culture.* The incubator should be correctly adjusted to a temperature of 38° C., and kept under lock and key.

Laboratory animals should also be preserved against possible infection by animals or germ carriers harbouring virulent T. B.

Bact. Laboratory,
14th May 1928.

Edg. MAYA,
Asst. Superintendent.

A NOTE ON CERTAIN CERCARIAE INFECTING LOCAL FRESH WATER MOLLUSCS by F. J. R. MOMPLÉ, M.B.C.M., D.P.H. M.O.H. PL. WMS.

During such leisure as was afforded I continued to give attention to the search for the intermediate in Mauritius host of the cercaria of the Schistosoma haematobium. Success has not yet attended our efforts, but I have had occasion to detect the presence of and study a number of cercariae in our fresh water molluscs. All of them except one were locally found for the first time by me. The following are brief notes on these cercariae. Works of reference available here on the subject being scanty, I have not attempted identification with cercariae found elsewhere. I have accordingly followed the example of Sewell, given serial numbers to the cercariae and designated them as "Cercariae Mauritianae."

BRIEF NOTES ON CERCARIAE MAURITIANAE.

The search for larval forms of trematodes in our fresh water molluscs was begun by me in December 1911. I am not aware that such work has been done previously or that anything has been written on the subject in Mauritius. Loos' theory of direct penetration of of the miracidium of Bilharzia was then in favour. The well known development of the cercaria of the Distomum hepaticum in the Limnea truncatula and the detection of cercariae in other molluscs led me to the conviction that the development of the miracidium of Schistosoma haematobium was most likely to take place in those intermediate hosts. Leiper's discovery came and confirmed this impression. My first cercaria was discovered on Christmas Day 1911 and early in the ensuing year I found the second cercaria. From that time the work, owing to the nature of my duties, had to be intermittent and it was only resumed with some regularity when more suitable opportunity was afforded in 1926. In May 1926 I came across Cercaria III. Cercaria IV was found soon after at the Bacteriological Laboratory where, at the invitation of Mr. Maya, the Assistant Director, I had given a demonstration to the students. I detected the forms returned under Cercaria V in March 1928. The other forms were discovered subsequently. The following gastropode fresh water molluscs have been examined. The names given are derived from the Lienard collection of shells in the Mauritius Museum or from specimens identified in England and kindly communicated to me at the Laboratory of the Military Hospital.

Melania tuberculata (Muller-Lien. Col.) also named Thiara tuberculata (Muller-Lab. Milit. Hosp.): possibly Melanoides tuberculatus (Muller-Sewell's Cercariae Indicae)—found infected with Cercariae Mauritianae I, II and VI.

Melania virgulata (Ferrussac-Lien. Col.) possibly Melanoides lineatus (Gray-Sewell's Cercariae Indicae)—found infected with Cercariae Mauritianae I and II.

Melania spinulosa (Lamarck-Lien. Col.), also named Thiara scabra (Muller-Lab. Milit. Hosp.); possibly Melanoides scabra (Muller-Sewell's Cercariae Indicae)—found infected with Cercariae Mauritianae I, III and VI.

Limnea mauritiana (Morelet-Lab. Milit. Hosp.) also named Limnea rufescens (Gray and Morelet-Lien. Col.)-not found infected until 1926 when Cercariae Mauritianae IV were detected. Subsequently Cercariae Mauritianae V and VII. were found.

Isidora cernica (Morelet-Lab. Milit. Hosp.) also named Physa borbonica (Sganzin-Lien. Col.), *Paludina zonata* (Lien. Col.), *Neritina caffra* (Lien. Col.) *Navicella bimaculata* (Reeve-Lien. Col.) and three other molluscs (two of limnea type, of which one laevorotatory and one of cyclostoma type), which I have not yet been able to identify have been examined. No primary infection has as yet been detected in them. The presence of encysted cercariae which are often met with is not reckoned as primary infection viz: infection with cercariae together with their sporocysts or rediae.

In the publication referred to at the end of this report I have called "Paludina vivipara" our only mollusc of that kind. This arises from the fact that I have but quite recently met with the specimen of Paludina zonata in the Lienard Collection and had before been guided by the drawing of Paludina vivipara given in Blanchard's "Traite de Zoologie Medicale."

The rate of infection of the molluscs generally shows a seasonal variation. From my observations the percentage of infection can be approximately set down as follows; Cercariae Mauritianae I, 5–10%; Cercariae Mauritianae II, 2–5%; Cercariae Mauritianae III, 5–25%; Cercaria Mauritianae IV, 2–15 o[o. The other cercariae are of rare occurrence.

Mixed infection has been observed of Cercariae Mauritianae I and rediae containing only daughter rediae and of Cercariae Mauritianae I and III; the first on one occasion only and the second several times.

Under suitable conditions cercariae not encysting in the open may be kept alive for 24 hours. My observations tend to show that they soon perish when the infected mollusc is dead. The mechanism of extrusion from the live infected mollusc has not been traced out, but it would appear that cercariae which develop in rediae leave their host more easily; this can be well observed in the case of Cercariae Mauritianae II and III.

Infection as a rule is noted in molluscs of a certain size, but Cercariae Mauritianae III have been found on a large scale in very small individuals of Thiara scabra, their only host so far.

Cercariae generally show selectivity of host, but Cercariae Mauritianae I are met with at nearly the same rate in the three types of Melania above mentioned.

Sporocyts as a rule appear as motionless sacs, but on one occasion, in a preparation of young unidentified sporocysts, one or two of them showed well-marked vital movements.

Encystment generally takes place in the open or in a second intermediate host after penetration. Encystment inside the sporocyst has been noted on one occasion in the case of Cercaciae Mauritianae IV. With Cercaciae Mauritianae VII the bulk of encystment is in a second intermediate host.—Isidora cernica—, but these cercariae have been found to encyst in the primary intermediate host and also in several of the rediae in which they develop.

CERCARIAE MAURITIANAE I.

This cercaria is found in the Melania tuberculata, Melania virgulata and Melania spinulosa; infected individuals generally showing a yellowish or orange-yellow spot seen through the shell in the region of the liver gland. The cercaria is distome. It is very active, swimming by lashing movements of the tail with the body bent ventrally and rocking rapidly from side to side about its long axis or crawling about by means of its suckers. The body roughly oval in shape and broader anteriorly is about 0.35 mm. long and 0.09 mm. broad, the broadest part being between the oral sucker and the acetabulum. The tail about 0.21 mm. in length, is attached to the ventral aspect at the posterior end of the body. Both the body and tail are capable of a certain degree of extension and contraction, the latter sometimes broadening out considerably on contraction. The body is covered with a number of minute backwardly-directed spines showing no special arrangement. The oral sucker, situated at the anterior end is 0.053 mm. in diameter. The ventral sucker or acetabulum, somewhat smaller is 0.050 mm. in diameter and is situated at the junction of the anterior three-fifths with the posterior two-fifths of the body. The mouth is subterminal and opens into the cavity of the oral sucker. Immediately behind the oral sucker lies a small pharynx, 0.02 mm. in diameter, but no further trace of the oesophagus or intestinal caeca has been detected. The salivary glands consist of three pairs of cells situated one on each side in front of the acetabulum and opening by three pairs of ducts passing round the sides of the sucker to near the base of the stylet. The cercaria is a Xiphidio-cercaria; the dorsal wall of the sucker is armed with a small stylet, 0.01 mm. long, with a small bulbous expansion near the base. The excretory bladder is elongated and large, extending from the excretory pore from which it expands, to behind the acetabulum where it divides into two cornua reaching up one on each side to its anterior margin. No collecting and excretory tubes nor flame cells have been detected. The cercaria develops in sausage-like sporocysts which form a yellowish or orange-yellow circumscribed mass in the hepato-pancreas of the infected mollusc. The sporocysts vary in length up to about 1.25 mm. and are of an average breadth of 0.172 mm. The free cercariae have been found experimentally to encyst in the young molluscs obtained from the ovisac of Paludina zonata and the three melaniae examined, after dropping their tails. They account no doubt for many of the encysted cercariae found on dissection in the adult melaniae which often show both primary and secondary infection.

CERCARIAE MAURITIANAE II

These cercariae are distome. When free they swim easily in water, the tail lashing about and the body jerking forward. An undulatory movement results and they rapidly make their way from the bottom of a watch-glass or test-tube to the surface of the water. They there hang down, attached to the film surface of the water by means of the adhesive organ situated at the tip of the tail and wriggle about in that position. Both body and tail show a very great range of extension and contraction, the cercaria narrowing on extension and appearing worm-like when fully extended. A fair average length of the body is 0.468 mm. The tail is of the long type and extended may be as long or longer than the body at rest. The body of the cercaria is long and somewhat narrow. The greatest body-width lies in front of the acetabulum, about midway between it and the pharynx. At the level of the ventral sucker or a little behind, the body often shows a slight constriction. In the mature cercaria the surface of the body is of a pale yellowish-brown colour. Numerous small spines directed backwards are imbedded in the cuticle of the cercaria; these spines are clearly seen in the metacercaria liberated from the cyst. The acetabulum is situated somewhat behind the middle of the body-length, the pre-andpost-acetabular lengths being in the proportion of 86 : 60. It has a diameter of 0.078 mm. The tail at its tip shows a small invagination into which a group of four club shaped gland-cells with round clear nuclei open, each by a separate duct. The oral sucker occupies the anterior end of the body; when the body is at rest it is spherical, with a diameter of 0.068 mm. The mouth is subterminal; it leads back into a short prepharynx which is followed by a muscular pharynx, oval in shape, its long axis being antero-posterior, measuring 0.04 mm. in length by 0.023 mm. in breadth. Behind the pharynx is an intestine of varying length which is narrow at first and then much dilated. In front of the acetabulum the intestine bifurcates into two long intestinal caeca which extend backwards to the level of the excretory vesicle where they terminate. The salivary glands consist of a group on each side of some sixteen gland-cells situated near the bifurcation of the intestine; from them a cluster of ducts runs forwards to the sides of the oral sucker terminating by eight openings on each side on its anterior lip. The excretory vesicle is of a somewhat pyriform shape; it is situated at the extreme posterior end of the body and opens to the exterior by an excretory pore. I have had occasion to detect in the tail an excretory tube bifurcating to lateral terminations near the proximal end of the organ. From the anterior end of the bladder a pair of main excretory tubes pass forwards to the level of the pharynx where they loop and pass backwards to the level of the middle of the acetabulum where they divide into two collecting tubes, one passing forwards to the anterior and the other backwards to the posterior end of the body. I have been able to locate eleven pairs of flame cells in the cercaria.

The cercariae develop in rediae. In ripe rediae ambulatory processes and a caudal part can be made out. The rediae crawl about when dissected out in a drop of water. Two pairs of flame cells have been noted, one near the ambulatory process and the other at the anterior end near the pharynx. In ripe rediae the intestine appears as a small sac behind the pharynx. The average length of ripe rediae is 1.37 mm. and the average breadth 0.32 mm. ; they may contain from two to nine cercariae actively moving within them.

The cercariae leave the rediae by the birth pore, situated near the anterior end of the rediae. When free, the cerceriae soon encyst in the open, the cysts adhering to the surface on which they are formed. The cyst is flask-shaped with a short and expanded neck, measuring 0.30 mm. in length and 0.18 mm. in the broadest part of the flask. The tail of the cercaria is often seen near the cyst and sometimes nearly continuous with the neck. When freshly encysted under cover glass, the metacercaria can be extruded from the cyst through the neck of the flask by gently tapping the coverglass with a dissecting needle, The metacercaria in addition to cuticular spines shows on each side between the middle line and the external margin of the body a row of much larger spines placed at intervals and extending from the anterior lip of the oral sucker to a little behind the ventral sucker. Some eighteen such spines have been observed on each side.

The mollusc hosts of the cercaria are Melania tuberculata and Melania virgulatata. The hepato-pancreas is affected ; the rediae are disseminated throughout the whole gland and give it a mottled-grey appearance.

CERCARIAE MAURITIANAE III.

This cercaria is monostome. The free cercaria is a moderately active swimmer progressing in the water by wriggling movements of the body and tail ; it is also able to crawl about with the help of two sucker-like organs of fixation situated at the posterior extremity, one on each side of the tail insertion. The body is roughly oval in shape when at rest, the greatest breadth being at the middle. As the cercariae do not leave the rediae in large numbers or soon encyst, measurement of the body has to be made while they are still in the rediae. The average length thus found is 0.375 mm. There is no trace of an acetabulum. The single sucker situated at the anterior end is spherical and about 0.045 mm. in diameter. The tail is simple and of the long type ; it may be as long and sometimes longer than the body and is attached to the ventral aspect in an invagination of the body at the posterior extremity forming the tail insertion.

The striking feature of this cercaria is the presence of eye-spots of which three are found ; two well marked, one on each side at the junction of the first two anterior fourths of the body and one in the middle line a little above, formed by an accumulation of pigment. The cercaria is hence of the trioculata group. The presence of pigment and opaque cystogenous cells renders the tracing out of the anatomical details difficult. Starting from the middle eye-spot are two large bands of refractile granules extending backwards to the level of the bladder where they meet. They run midway between the external margin of the body and the middle line. These granules follow the course of the main excretory tubes but do not appear to be lodged inside them. The mouth is subterminal ; it opens in the sucker and leads back into a long oesophagus which at some distance behind the level of the eye-spots divides into two intestinal caeca which extend backwards to a little beyond the anterior half of the body where they terminate. No pharynx has as yet been made out nor any salivary glands or ducts. The excretory vesicle is somewhat spherical in shape ; it is situated at the posterior end of the body and opens to the exterior by an excretory pore. From each side of the bladder anteriorly two large main excretory tubes pass forwards to the level of the eye spots where they appear to divide into two branches, one anastomosing with the corresponding tube on the other side and the other running forward to the sucker. No flame cells have so far been detected.

The cercariae develop in rediae. Rediae at all stages of development are seen but generally they are more or less of the same age. The young rediae show well-marked ambulatory processes and a caudal portion ; they are active and move about with the help of the ambulatory processes, extending the anterior part of the body forwards, often in a long goose-neck like projection. They show a large blind convoluted intestinal tube-sac, with germinal cells in the body-cavity. As the redia ripens and the cercariae develop the intestine gradually gets smaller and is ultimately reduced to a small sac behind the muscular pharynx. Young daughter-rediae and cercariae together have been noticed in some mature rediae, but this is of rare occurrence. The rediae show three pairs of flame cells ; one at the level of the ambulatory processes and two anteriorly near the pharynx. The ripe rediae measure 1-1.25 mm. in length, an average being 1.15 mm. They may contain up to six living cercariae. In some instances orange-yellow colouring matter is seen in the rediae.

The free cercaria encysts in the open, forming round or slightly oval cysts. The tail is shed off. The cyst adheres to the surface on which it is formed and measures about 0.21 mm. in diameter.

The mollusc host of the cercaria is the Thiara scabra (Melania spinulosa). As has already been stated, the rate of infection is very high at certain seasons of the year and very small snails may be infected. The hepato-pancreas is not affected; the seat of infection is more forwards in the region of the stomach and gonads. When the shell of the snail is somewhat worn off, the infection shows through it as a pearly or orange-yellowish streaked patch.

CERCARIAE MAURITIANAE IV.

I was informed of the existence of this cercaria in June 1926 by Mr. Maya, Assistant Director of the Bacteriological Laboratory. Since I had given a demonstration there, the search for cercariae had been taken up regularly and the new cercaria was found in Limnea mauritiana from Plaines Wilhems river. I was surprised to learn that a cercaria had been met with in this mollusc. I had examined a large number of Limnea mauritiana from the same river at various periods during the earlier part of my research work and had always found them free from infection. I again collected some of the molluscs from the river and found a high percentage of infection. The negative results of my previous examinations led me to the conclusion that we were in presence of a new element in that river. The recently introduced toad (Bufo regularis) stood out as the possible causal factor. As soon as the breeding season set in, I placed the cercariae in presence of small tadpoles of the toad, this early in July 1926. My surmise was confirmed by finding that the cercariae encysted in large numbers in the gills and respiratory organs of the tadpoles. Controls showed no infection. I informed Mr. Maya of this and communicated to him the drawing of a cyst I made with the camera lucida. This discovery shows that the toad has been instrumental in the introduction and dissemination of the cercaria in Mauritius.

The cercaria is distome. It is very active, swimming in water like Cercariae Mauritianae I by lashing movements of the tail and rapid side to side rocking of the body curved ventrally; it also crawls in the usual way. The body roughly oval in shape is broadest about midway between the two suckers and measures about 0.296 mm. in length. The breadth is about 0.166 mm. Both this cercaria and Cercariae Mauritianae I often remain quiet with the anterior part of the body curved ventrally thus rendering observation difficult. The body is then pear-shaped, rather flat in outline anteriorly and narrowing backwards to the tail. The tail is of the simple and short type; about 0.183 mm. in length, and attached to the ventral aspect at the posterior end of the body in a tail insertion about 0.16 mm. broad. Both the body and tail are capable of a certain degree of extension and contraction; the tail when contracted may appear very short and broad. The body is covered with numerous backwardly-directed spines not showing any special arrangement. The acetabulum is situated somewhat behind the middle of the body-length, the pre—and post—acetabular lengths being in the proportion of 43 : 31. It has a diameter of 0.05 mm. The oral sucker occupies the anterior end of the body, a small space being sometimes left from the extreme anterior outline. It is spherical, larger than the ventral sucker and measures 0.066 mm. in diameter. The mouth is subterminal, opening in the oral sucker; it leads back into a prepharynx of a certain length which is followed by a muscular spherical pharynx about 0.026 mm. in diameter. Behind the pharynx is an intestine which divides into two short caeca reaching and terminating not farther backwards than the anterior margin of the acetabulum. The intestine as a rule is not easily seen, but I have been able to define it quite clearly in a number of specimens and in living metacercariae inside their cysts. It can be seen to contract into a sac behind the oesophagus or expand into the caeca. The salivary glands consist of a group of six gland-cells, one on each side in front of the acetabalum. From the gland mass two ducts on each side pass forwards to the side of the oral sucker where they bend round towards the middle line terminating near the stylet by two openings. Four of the gland cells are clear and two granular. The cercaria is a Xiphidiocercaria; the dorsal wall of the oral sucker is armed with a long stylet plainly visible under low power. The stylet is 0.028 mm. long and 0.005 mm. broad, with a bulbous expansion 0.003 mm. long and 0.006 mm. broad near its pointed tip. The excretory bladder opens to the exterior by an excretery pore. It is flask-shaped with the neck directed forwards and dividing into two cornua reaching one on each side to about the level of the middle of the acetabulum. From each horn a short main excretory tube extends outwards and divides into two collecting tubes, one passing forwards to the side of the anterior sucker and the other backwards to the posterior extremity of the body. I have detected five pairs of flame cells in the cercaria. The cercaria develops in sac-like oval or elongated sporocysts, of varying lengths up to about 0.65 mm., containing four to eight ripe cercariae.

The cercaria when free encysts in the pulmonary organs of the tadpole of the toad as has already been stated and on this account I at first called it the toad cercaria. The stylet is shed and can be seen lying about inside the cyst. The tail is as usual dropped before encystment. The cysts are somewhat oval in shape, with average diameters of 0.149 mm. 0.136 mm. On one occasion the cercaria was found encysted in its sporocyst; one sporocyst containing one cyst and another two.

The only mollusc host of the cercaria so far found is Limnea mauritiana. The infection extends to the whole of the hepato-pancreas which has a greyish white-appearance seen through the shell when the infection is heavy. The snails infected are of a fair size.

CERCARIAE MAURITIANAE V.

The free cercaria has not yet been found, but I have assigned to it a serial chronological number under the following conditions. On the 14th March 1928 I found in a Limnea mauritiana a number of rediae showing characters of echinostome rediae. On the 1st of April I detected in a mollusc of the same kind an encysted echinostome cercaria. Subsequently, in November, I came across complete infection with an echinostome cercaria in a Limnea mauritiana, but this latter cercaria being armed with much smaller collar spines and its rediae being of a somewhat different type, I have until further elucidation, given it a different serial number under Cercariae Mauritianae VII.

The echinostome redia which I have provisionally associated with Cercariae Mauritianae V has a well-marked muscular pharynx with a small intestinal sac behind it. The rediae show a distinct collar. The younger individuals show well-developed ambulatory processes and a long caudal portion. The older rediae contained daughter-rediae and germinal cells only and the daughter-rediae were moving inside the parent. The larger specimens measured about 0.40 mm. to 0.75 mm. in length.

The cyst was about 0.166 mm. in diameter. The metacercaria curled up inside it was plainly visible, with two rows of alternating long collar spines, measuring 0.015 mm. in length and 0.003 mm. in breadth at the base. The spines formed a striking feature of the encysted cercaria. The ventral sucker stood out well, with a diameter of 0.053 mm. The oral sucker was flattened sideways. The metacercaria was alive when the cyst was detected. The molluscs above referred to came from the Plaines Wilhems River and one of its tributaries. In November I met with similar cysts in a Limnea mauritiana from River du Rempart in Black River District.

CERCARIAE MAURITIANAE VI

The cercaria is amphistome. It is very active in water, lashing its tail about, swinging a little from side to side and then changing its place by suddenly darting across sideways, much after the manner of anopheline larvae. This way of swimming is no doubt due to the fin-folds with which the tail is provided. The body is capable of a good degree of extension and contraction. It is generally pyriform in shape ; in some cases it is elliptical in outline and in others with parallel sides in the middle tapering anteriorly and rounding in posteriorly. These various shapes are assumed when the cercaria is alive, but they are often retained in the resting stage and one may find small pyriform bodies with very long tails. The length of the body varies from 0.150 mm. to 0.330 mm., the average length being 0.295 mm. The tail is of the long type and is attached to the ventral aspect of the posterior end of the body. It varies from 0.345 mm., to 0.555 mm. in length, being 0.391 mm. long on an average. The organ is provided laterally with transparent membranous fin-folds, most evident at the proximal and distal thirds. When the tail is contracted the membrane is thrown into folds which appear like setae or thin spines. The fin-fold is broadest anteriorly where it may extend out 0.033 mm. on each side from the margin of the tail. The tail insertion is about 0.026 mm. broad. The body is covered with a number of minute spines which at the anterior end are longer and directed forwards . The oral sucker occupies the anterior end of the body. It is elongated when the anterior part of the body is tapering and spherical, with a diameter of 0.046 mm. when the body is at rest in the other shapes above mentioned. The ventral sucker is situated posteriorly, at the anterior margin of the tail insertion ; it is circular in outline in the resting stage, with a diameter of 0.043 mm. The mouth is subterminal, protrusible and opens in the anterior sucker. I have not yet been able to trace out the alimentary tract and the excretory organs, the cercaria being a rare one and the salivary glands and ducts rendering observation of the other internal details difficult. I have not as yet detected any flame cells. The salivary glands occupy the greater part of the body-cavity ; they consist of two groups, each of six large nucleated gland-cells, forming a horse-shoe-shaped cluster extending from near the level of the eye-spots to the sides of the ventral sucker. From each glandular mass a cluster of ducts passes forwards to the sides of the oral sucker and then inwards to its anterior margin where they terminate by three duct openings on each side of the middle line. In the middle of the dorsal lip of the oral sucker at the opening of the mouth is a piercing apparatus consisting of a small bundle of penetrating spines directed forwards. At the extreme anterior end of the body are a number of similar spines directed forwards ; from these, smaller spines turned in the opposite direction extend backwards along the body. The mouth is protrusible. The cercaria shows two well defined eye-spots with a clear lens-like portion, the eye-spots are situated midway between the middle line of the body and the lateral margin at about the level of the junction of the anterior third with the posterior two-thirds of the body-length. The striking features of the cercaria are the eye-spots, the large size of the salivary glands and the fin-folds of the tail. The cercariae have so far been found associated with rediae containing only daughter-rediae and germinal cells, together with rediae containing forms which looked like immature cercariae but which could not be clearly identified as such and free young rediae. The free young rediae are stumpy, with a large circular and muscular pharynx standing out well; they present in the interior a large vacuole which is no doubt the intestinal sac. The young rediae showed vital movements. The larger rediae, measuring about 0.75 mm. in length were devoid of movement and some showed hour-glass constriction. Rediae with mature cercariae have not yet been seen. I have carefully searched for them in the material available which, though restricted, appeared ample to show this stage of development which must await elucidation from further observation as occasion will arise. The free cercaria does not encyst in the open. From its structure it is probable that it encysts in a second intermediate host, but owing to its rarity I have not yet had occasion to submit it to experiment in this connection. The mollusc hosts so far found are Melania tuberculata and Thiara Scabra — The infection is disseminated in the hepatopancreas of the snail host.

CERCARIAE MAURITIANAE VII

The cercaria is distome. It moves actively in water, swimming in much the same manner as Cercariae Mauritianae I and crawls in the usual way. The body is pear-shaped, ovoid or with parallel sides tapering anteriorly and bluntly rounding in posteriorly. In front of the pharynx it shows a well marked collar beyond which it tapers to its enterior extremity. In some specimens the collar on the ventral aspect forms two laterally projecting rounded expansions which with the anterior end give a trefoil appearance. A row of backwardly-directed spines of moderate size extends round the collar, with two clumps of similar spines a little behind it on each side of the ventral aspect. The length of the body varies from 0.277 mm. to 0.330 mm., with an average of 0.295 mm., the breadth is about 0.15 mm. Both the body and tail are capable of a certain degree of extension and contraction. The tail is of the simple type, somewhat long but not so extensible as in the case of Cercariae Mauritianae II. It is attached to the ventral aspect at the posterior end of the body in a tail insertion 0,040 mm. broad. The tail varies in length from 0.270 mm. to 0.360 mm., with an average of 0.318 mm. and shows transverse striations which give a festooned appearance to the margins of the organ.

The acetabulum, larger than the anterior sucker, is situated a little behind the middle of the body-length ; the pre-and post-acetabular lengths being approximately in the proportion of 58 : 23. It is circular in outline, with a diameter of 0.066 mm. The oral sucker, owing to the more frequent somewhat tapering shape of the anterior end of the body is longer than broad, measuring about 0.053 mm x 0.038 mm. ; when spherical, the anterior sucker has a diameter of 0.050 mm. The mouth is subterminal. It leads back into a short prepharynx which is followed by a muscular pharynx, oval in shape with its long axis antero-posterior and measuring about 0.026 mm. x 0.023mm. Behind the pharynx is a long slightly dilated intestine. In front of the acetabulum the intestine bifurcates into two long intestinal caeca which pass backwards round the sides of the sucker to the posterior end of the body where they terminate at the level of the excretory bladder. The excretory vesicle opens to the exterior by an excretory pore, from which it extends to about the middle of the post-acetabular length. It is somewhat pyriform in shape, sometimes showing a constriction at the anterior third. From the anterior end of the bladder a pair of main excretory tubes pass forwards. From the level of the anterior margin of the acetabulum these tubes are much dilated, wavy in outline and filled with excretory granules. They get narrow again near the pharynx. At the level of the anterior end of the pharynx they loop back inwards and run backwards. Their course backwards has not yet been traced owing to opacity of the cystogenous cells. For the same reason I have not yet been able to detect salivary glands. I have however been able to locate fourteen pairs of flame cells in the cercaria. The body appears to be covered with minute spines directed backwards. The cercaria belongs to the echinostome group. Its striking features are the collar, the well developed intestine and the dilated anterior portions of the main excretory tubes filled with excretory granules.

The cercaria develops in rediae. The mature rediae are long and narrow, being about 0.3 mm. broad. They may reach up to a length of 2.5 mm. and may contain ten to twelve mature cercariae along with immature cercariae and germinal cells. The rediae do not show well marked ambulatory processes, but the posterior third of their length forms an obtuse angle with the anterior part and the point of the angle appears to represent an ambulatory process.

The cercaria does not encyst in the open. It was first detected free, with tail still attached, in Isidora cernica along with cysts. Owing to the absence of rediae, it was evident that the cercariae had attacked the mollusc for encystment. Another Isidora cernica from the same lot in a small vessel of water showed similar invasion. Among the Isidora snails were some Limnea mauritiana in one of which primary infection with cercariae and rediae was found, thus establishing this mollusc as a primary intermediate host. Up to now no other kind of mollusc has been found to harbour the cercariae and rediae. I have found the cercaria encysted in its primary intermediate host and also in several of its rediae. I have succeeded in obtaining encystment in Limnea mauritiana, Isidora cernica and young

Paludina zonata. In one case I obtained an extensive formation of cysts in the gonads of an Isidora cernica. The cysts are round and of an average diameter of 0.133 mm. The infection is disseminated in the hepato-pancreas of the Limnea mauritiana, the organ being mottled-grey in appearance.

The above notes do not purport to be an exhaustive description of the cercariae under report. Some minor details have been omitted; for example, reference to cystogenous cells which exist in all those cercariae has only been made when the characters presented by these cells affect the progress of the research work. Some of the cercariae have but recently been detected; they are of rare occurrence and have not always been met with at a time convenient for fuller observation or for experimenting with them. Besides, the search for elements of nervous tissue and rudiments of genital organs has not yet been attempted in a systematic manner. The work is being continued as opportunity can arise; it must perforce be intermittent and has been up-hill all the time. Through lack of sources of reference and of information I have had to gradually contrive my own technique in carrying out the work. When I first started, my only work of reference was the "*Traité de Zoologie Médicale*" by Professor R. Blanchard. His admirable description of the development of the cercaria of the Distomum hepaticum and the information given me by Mr. Maya that he had seen in the water of the Plaines Wilhems River something that appeared to look like a cercaria led me to undertake the search for trematode larval forms in our fresh water molluscs. Mr. Maya was then Acting Director of the Bacteriological Laboratory. I would avail myself of this opportunity to express my thanks to him for the kind hospitality and assistance he gave me in the early days of the work. I also feel very grateful to the Honourable Dr. Kirk, our Medical Director for the interest he has taken in my work and for having encouraged me to write a much more detailed report than I at first intended to submit.

No regular Schistosomiasis census has as yet been made in Mauritius, but a number of centres of infection are well known in Pamplemousses, Flacq and Black River districts. In Plaines Wilhems infection exists along the course of the Plaines Wilhems river and some its tributaries. Cases are met with in the Rose Hill area and at Petit Camp especially. In the latter place several infected children can easily be found at any time. Enquiries which I have made in the local schools show that infected children can also be found in the Phœnix area. Snail infection experiments with miracidia of the Schistosoma haematobium have now and again been tried, but without success so far.

During the course of my research work I have had occasion to detect adult distomes in the intestinal tract of the frog and young distomes in the liver of the toad. An adult distome of the Eurytrema group also exists in the pancreas of our bovines and from the reports I have, it appears to be very common. In the organs I have examined, the infection of the pancreatic channels is intense and there can be no doubt that the affected animal must eventually suffer in its general health from the presence of the parasites.

I have been kindly permitted by the "*Société Médicale*" to forward as part of this report the annexed plates prepared by me illustrating Cercariae Mauritiana I to V. The plates were published in No. 7 "8me serie" of the "Bulletin" of the "Societe", with the description of a demonstration I gave to the "Societe" at a meeting held on the 22nd of March 1928.

F. J. R. MOMPLÉ
M. O. H. Plaines Wilhems.

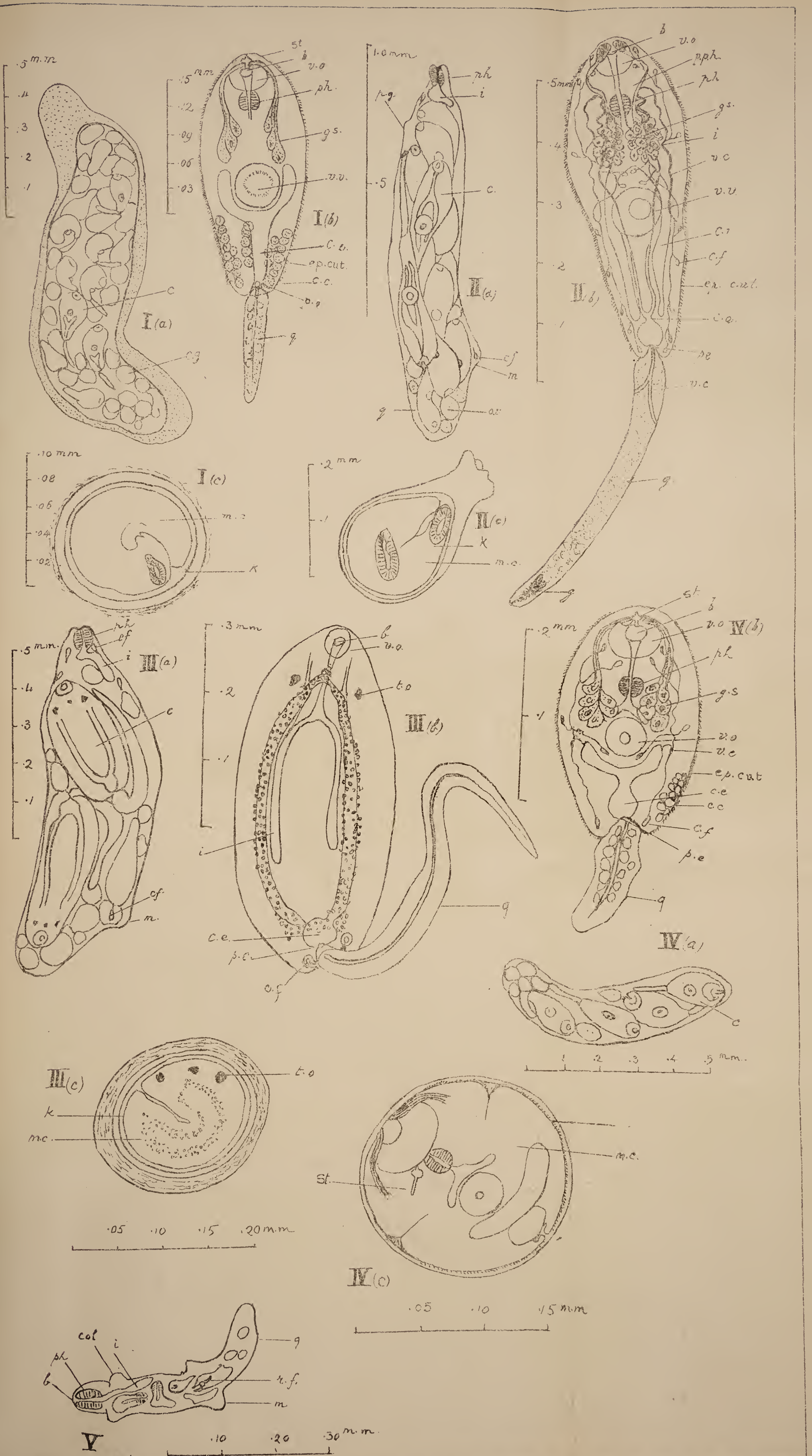
EXPLANATIONS OF PLATES I–V

PLATES

I (*a*)—Cercariae Mauritianae I—Sporocyst
I (*b*)— ,, ,, —Cercaria
I (*c*)— ,, ,, —Cercaria encysted in Paludina.
II (*a*)—Cercariae Mauritianae II—Redia
II (*b*)— ,, ,, —Cercaria
II (*c*)— ,, ,, —Cyst.
III (*a*)—Cercariae Mauritianae III—Redia
III (*b*)— ,, ,, —Cercaria
III (*c*)— ,, ,, —Cyst.
IV (*a*)—Cercariae Mauritianae IV—Sporocyst
IV (*b*)— ,, ,, —Cercaria
IV (*c*)— ,, ,, —Cercaria encysted in tadpole of toad.
V —Cercariae Mauritianae V—Redia.

ABBREVIATION

b.—(bouche) mouth
c.—(cercaire) cercaria
c.c.—(cellules cystogènes) cystogenous cells
c.e.—(canal excréteur) excretory bladder
c.f.—(cellule flamme) flame cell
c.i.—(cæcum intestinal) intestinal cæcum
c.g.—(cellule germinale) germinal cell
col.—(collier) collar
ép. cut.—(épines cuticulaires) cuticular spines
g.—(glande caudale) tail gland
g.s.—(glande salivaire) salivary gland
i.—(intestin) intestine
k.—(kyste) cyst
m.—(moignon) ambulatory process
m.c.—(métacercaire) metacercaria
o.f.—(organe fixateur) organs of fixation
ov.—(ovule) ovule
p.e.—(pore excréteur) excretory pore
p.g.—(pore génital) genital pore
p.h.—(pharynx) pharynx
p.ph.—(prépharynx) prepharynx
q.—(queue) tail
r.f.—(rédie fille) daughter redia
st.—(stylet) stylet
t.o.—(tâche oculaire) eye-spot
v.c.—(vaisseau collecteur) collecting tube
v.o.—(ventouse orale) oral sucker
v.v.—(ventouse ventrale) ventral sucker



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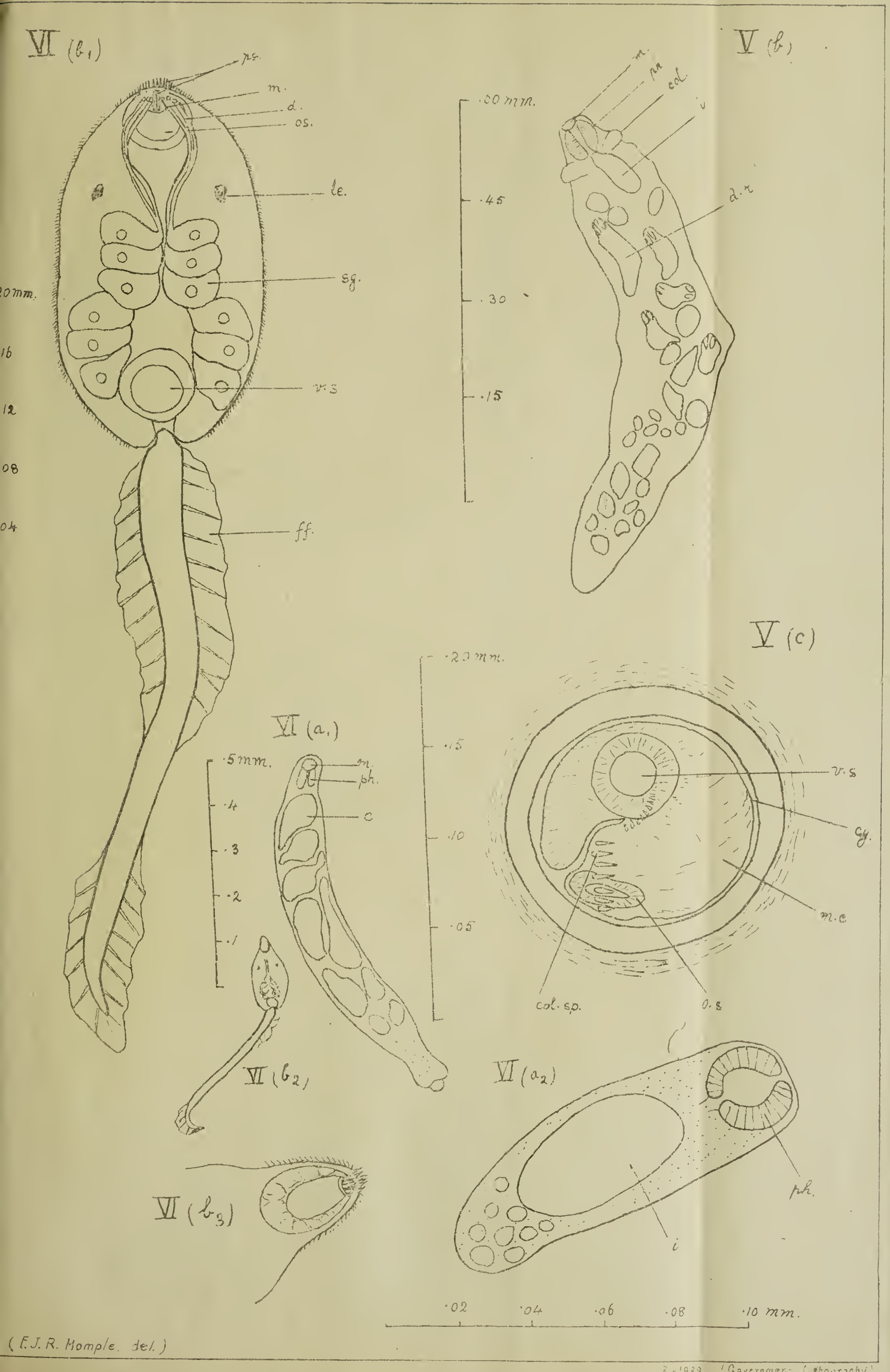
GOVERNMENT LITHOGRAPHY, 2.1929

EXPLANATOIN OF PLATES V (*b*) TO VII (*d*) &c.

V (*b*)—Cercariae Mauritianae V—Redia
V (*c*)— ,, ,, —Encysted cercaria
VI (a^1)—Cercariae Mauritianae VI—Redia
VI (a^2)— ,, ,, —Young redia
VI (b^1)— ,, ,, —Cercaria
VI (b^2)— ,, ,, —Cercaria
VI (b^3)— ,, ,, —Head showing penetrating organ
VII (*a*)—Cercariae Mauritianae VII—Redia
VII (*b*)— ,, ,, —Cercaria
VII (*c*)— ,, ,, —Encysted cercaria
VII (*d*)— ,, ,, —Cercaria encysted in redia
II (*d*)—Cercariae Mauritianae II—Metacercaria showing body spines
IV (*d*)—Cercariae Mauritianae IV—Cercariae encysted in sporocyst

ABBREVIATIONS

am. pr.—ambulatory (locomotor) process
b.sp.—body spines
c.—cercaria
col.—collar
col. sp.—collar spines
cy.—cyst
d.—salivary gland duct
dr.—daughter-redia
ep.—excretory pore
ev.—excretory vesicle
f.c.—flame cell
f.f.—furcal fin-fold
g.c.—germinal cell
i.—intestine
i.c.—intestinal caecum
le.—lateral eye-spot
m.—mouth
mc.—metacercaria
mct.—main (collecting) excretory tube
os.—oral sucker
ph.—pharynx
pph.—prepharynx
p.s.—penetrating spines
s.g.—salivary gland
v.s.—ventral sucker



(E.J.R. Homple. del.)

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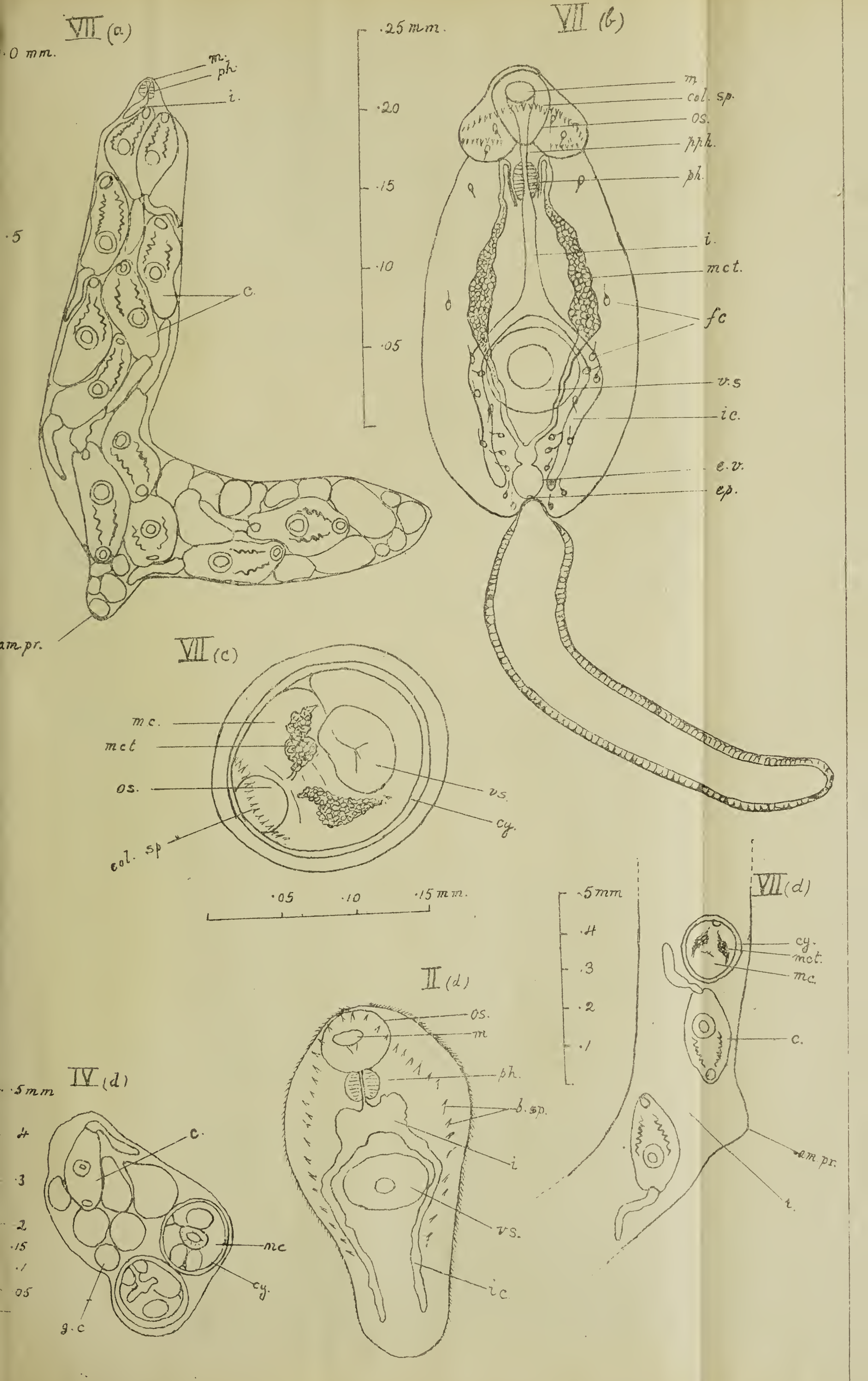

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APPENDIX I

REPORT ON THE MENTAL HOSPITAL FOR THE YEAR 1927.

The total number of certified insane persons in the Colony on 31.12.27 was 729, compared with 686 for 1924, 700 for 1925 and 719 for 1926.

Although these figures show a gradual yearly increase in the number of certified insane persons in the Island, yet, the ratio of total insane to total estimated population is practically constant for the years under consideration, thus showing that no undue influence are at work in the causation of insanity. Whether this will remain so for the years to come is a point that will be worth investigating, especially in view of the introduction in November 1927 of the New Licences Amendment Ordinance whereby the right to sell liquor has been extended.

2.—THE FOLLOWING TABLE SHOWS THE DISTRIBUTION OF THE 729 CERTIFIED INSANE PERSONS IN THE COLONY ON 31.12.27 :—

	General			Indian			Chinese			Total
	M	F	T	M	F	T	M	F	T	
At Mental Hospital	172	174	346	157	87	244	14	3	17	607
On probation leave	24	30	54	38	24	62	2	...	2	118
On leave under G.N. 239/24 ...	3	1	4	...	...	...	...	...	...	4
Total ...	199	205	404	195	111	306	16	3	19	729

Included under "General" is one male European.

The percentage sex distribution of the 729 certified insane was males 56.2 and females 43.8 compared with males 51.4 and females 48.6 for the estimated population of the Island on 31.12.27.

3.—THE FOLLOWING TABLE GIVES THE INSANE RATES PER 10,000 OF THE POPULATION OF THE ISLAND, CALCULATED ON THE NUMBER OF CERTIFIED INSANE PERSONS IN THE COLONY ON 31.12.27 :—

	M	F	T
General population ...	36.1	35.0	35.6
Indian population ...	13.4	8.2	10.9
Chinese population .	24.5	13.4	21.7
Total ...	——19.8	——16.3	——18.1

The above table shows :—

(i) Insanity is more prevalent among men than women, especially so in the case of Indians and Chinese—In England and Wales the reverse holds good, the relative percentage distribution of the sexes being males 43.9, females 56.1 for all notified insane persons under care during 1926.

(ii) The insane rate for the "General" section of the population is more than three times that for Indians—This marked difference in the incidence of insanity may be explained by :

(a) Alcoholism being more rife among Creoles.

(b) The Creole, being temperamentally more excitable than the phlegmatic and fatalistic Indian, is more liable to succumb to psychic trauma.

(c) Creoles, being mostly of the artizan class and entirely averse to Agricultural pursuits, find more difficulty in getting work than Indians—This naturally causes the Creole to suffer more from privation and worry.

(*d*) A fourth factor militating against the Creole is that he usually lives in overcrowded urban districts and in far from hygienic surroundings, whereas the average Indian, although also at disadvantage so far as housing conditions are concerned, spends a good deal of his time working in the open air in the comparatively sparsely populated districts of the Island.

(iii) The ratio of total insane to total population was 18.1 per 10,000, compared with 18.0 for 1926. The rate for England and Wales for 1926 was 35 per 10,000 showing that insanity is apparently less prevalent in this Colony. The reasons for this are probably :—

(*a*) General paralysis of the insane, which accounts for 5 to 15 per cent of the admissions to English Mental hospitals is rare in Mauritius. Thus out of 607 certified insane patients in hospital on 31.12.27 only 4, all males, are known to suffer from this disease.

(*b*) A simple civilization, so far as concerns the great bulk of the population, entailing lesser mental stress and strain.

(*c*) Insane types that would perforce find their way into Mental hospitals in centres where the struggle for life is intense, may more easily be kept at home where such struggle is less acute and where a lower standard of living obtains.

(*d*) the stigma connected with insanity and certification as well as the time honoured notion that a mental hospital is a sort of jail or oubliette may, to a certain extent, account for the fewer certified insane in the island, especially through the better class elements of the population keeping their mentally ill at home whenever it is possible to do so.

4.—HOSPITAL POPULATION.

There were 611 inmates (346 males, 265 females) in hospital on 31.12.27. Of these, 3 males and 1 female were under interim detention awaiting examination by the District Commissioners of Lunacy, so that the total number of certified insane persons in hospital on the above date was 607—343 males, 264 females—compared with 598—331 males, 267 females on 31.12.26.

Included in the 607 certified inmates were 13 male and 14 female paying patients.

The daily average number resident increased from 582 (males 335, females 247) in 1926 to 612 (males 341, females 271) in 1927.

5.—CRIMINAL MENTAL PATIENTS.

	M	F	F
In hospital on 31.12.26	12	...	12
Admitted during 1927	2	1	3
Discharged or dealt with under Art. 60 of Ord. 23 of 1906...	...	1	1
Died during 1927	...	...	...
Remaining on 31.12.27	14	...	14

Of the 3 criminal mental patients admitted during the year one, P.O., an untried male prisoner indicted for arson, suffered from chronic delusional insanity. Another, C... H..., a male feeble minded committed for indecency came here from New Central Prisons, Beau Bassin. The third criminal mental patient, A... P..., a woman, also a feebleminded, was committed for witchcraft and admitted here from the Prisons, Port Louis.

6.—THE FOLLOWING TABLE SHOWS THE DURATION IN HOSPITAL TO 31.12.27 OF THE 607 CERTIFIED INSANE RESIDENTS:—

	M	F	T
1 year or less	49	34	83
Between 1 and 2 years ...	39	26	65
„ 2 „ 3 „ ...	28	16	44
„ 3 „ 4 „ ...	27	21	48
„ 4 „ 5 „ ...	25	9	34
„ 5 „ 6 „ ...	14	9	23
„ 6 „ 7 „ ...	15	8	23
„ 7 „ 8 „ ...	8	12	20
„ 8 „ 9 „ ...	4	11	15
„ 9 „ 10 „ ...	5	8	13
„ 10 „ 15 „ ...	39	51	90
„ 15 „ 20 „ ...	26	21	47
„ 20 „ 25 „ ...	28	17	45
„ 25 „ 30 „ ...	14	10	24
Over 30 years	22	11	33
Total ...	343	264	607

It will be seen from the above table that more than half of the patients have been in hospital 5 years or more, the prognosis in the vast majority of these cases being hopeless.

7.—ADMISSIONS.

The total number of admissions during 1927 was 175 compared with 254 in 1926. These admissions were classified as follows:—

	1926			1927		
	M	F	T	M	F	T
1st admissions	69	52	121	62	42	104
2nd „	7	7	14	2	5	7
3rd „	3	...	3	3	...	3
4th „	...	...	...	1	...	1
6th „	...	...	...	...	1	1
Readmissions from probation leave ...	27	22	49	21	14	35
„ „ Barkly Branch Wards	27	30	57	...	...	...
„ „ leave under G.N. 239/24	3	7	10	19	5	24
Total ...	136	118	254	108	67	175

Since the incorporation of the Barkly Branch Wards in the Mental Hospital in July 1926 readmissions from them have ceased to appear in the annual list of admissions.

The following are included among the 115 persons admitted for the 1st, 2nd, 3rd, 4th and 6th times:—

M	F	T	
13	7	20	admitted under interim detention and later found not to be proper persons to be kept at the Mental Hospital and accordingly released by order of Magistrate.
2	1	3	admitted under interim detention and died whilst so detained.
3	1	4	admitted under interim detention and awaiting examination by Commissioners of Lunacy on 31.12.27.
18	9	27	Total not certified insane.

Hence, during 1927, there were admitted into the Mental Hospital, as certified insane, a total of 88 persons (males 49, females 39), hereunder referred to as direct admissions.

8.—THE DISTRICTS WHENCE CAME THE 88 DIRECT ADMISSIONS AND THE INSANE RATE PER 10,000 OF THE POPULATION OF SUCH DISTRICTS ARE GIVEN IN THE FOLLOWING TABLE :—

Districts	No. of direct admission	Estimated population of districts on 31.12.26	Insane rate per 10,000 of population
Port Louis	23	53,663	4.3
P. Wilhems	27	84,634	3.2
Grand Port	12	51,211	2.3
Pamplemousses	8	38,120	2.1
R. du Rempart	6	33,620	1.8
Savanne	5	34,704	1.4
Moka	4	32,737	1.2
Black River	1	14,255	0.7
Flacq	2	55,292	0.4
Total	88	398,236	2.2

The above table shows the the incidence of insanity is much lower in the Agricultural districts as compared with the industrial and commercial district of Port Louis. As usual the largest number of direct admissions came from the districts of Plaines Wilhems and Port Louis.

9.—THE FOLLOWING TABLE SHOWS THE PROBABLE CAUSES OF INSANITY IN THE CASE OF THE 88 DIRECT ADMISSIONS :—

Causes	M	F	T
Fevers malaria, ' flü &c. ...	13	9	22
Unkown causes	10	5	15
Heredity	6	7	13
Alcohol	9	0	9
Epilepsy	5	3	8
Previous attacks of insanity ...	5	5	10
Domestic trouble and grief ...	7	6	13
Mental worry, anxiety, overwork	6	6	12
Old age	...	2	2
Congenital defects ...	1	1	2
Syphilis	1	1	2
Business and pecuniary difficulties	3	1	4
Puerperal and parturition ...	...	4	4
Prolonged lactation ...	...	...	...
Pregnancy	...	...	...
Menopause	...	4	4
Puberty	...	...	...
Opium and gandia ...	...	...	...
Dysentery	3	...	3
Arteriosclerosis	1	...	1
Privation	4	2	6
Nephritis	...	3	3
Trauma—mastoid operation ...	2	...	2
Phthisis	1	...	1
Sepsis—Sinusitis, pyorrhea &c	1	2	3

In examining this table it must be borne in mind that one or more of the causes enumerated therein may be responsible for the production of the mental illness, hence the excess of the aggregate of such causes over the number of patients considered.

As usual fevers' heredity, alcohol, epilepsy, previous attacks of insanity, mental stress and strain are prominent etiological factors.

10. ALCOHOLISM

Of the 9 alcoholics admitted during the year 6 were creoles, 2 Indians and 1 Chinese. In 1926 out of 17 alcoholics admitted 11 were Creoles, 5 Indians and 1 European.

The following table gives the districts whence came the alcoholics admitted during 1926 and 1927 and the number admitted from each district:—

Districts	1926	1927
Port Louis	4	1
Plaines Wilhems	9	4
Pamplemousses	3	...
Savanne	1	...
Grand Port	...	2
Rivière du Rempart	...	2
Total ...	17	9

This table shows that Port Louis and Plaines Wilhems are the districts where alcoholics seem to thrive.

11.—DISCHARGES.

The total number of discharges during the year was 142 against 166 in 1926. Included in the latter figure are 25 chronics transferred to the Barkly Branch Wards. As these wards now form part of the Mental Hospital transfers to them have ceased to appear in the annual list of discharges.

The following table shows the classification of discharges:—

	M	T	F
Patients discharged recovered	...	...	...
„ „ relieved	41	37	78
„ „ not improved	4	7	11
Harmless dements transferred to Poor Law Infirmaries	1	6	7
Patients allowed out on 4 days' leave under G. N. 239/24	17	7	24
Discharged by Supreme Court to proceed overseas	1	...	1
Alleged mental patients found sane and released.	14	7	21
Total	78	64	142

The percentage of discharges (recovered, relieved, not improved) to admissions (direct admissions plus readmissions from probation) was 72.3—males 64.3, females 83.0. During the year 48 patients (males 22, females 26) on probation leave were found cured and finally discharged.

12.—DEATHS.

During the year there were 23 deaths (males 16, females 7) as against 39 in 1926. Of these deaths 6 took place within one month of admission and were mainly due to the poor state of health of the patients ahmitted. The death rate, calculated on the daily average number of patients resident, was 3.75 %, (males 4 69 %, females 2.58 %) as against 6.69 % in 1926. The death rate for all County and Borough Mental Hospital in England and Wales for 1926 was 7.3 % —males 8.2 %, females 6.6 %

The following table gives the number and causes of deaths during the year:—

Causes	M	F	T
Pneumonia	3	1	4
Dysentery	3	–	3
Senility	1	1	2
General Paralysis of the Insane	2	–	2
Influenza	1	–	1
Chronic bronchitis... ...	1	–	1
Pulmonary abscess ...	1	–	1
Phthisis	1	–	1
Acute pleurisy	–	1	1
Aortic regurgitation ...	1	–	1
Acute mania and cardiac failure	1	–	1
Pelvi-rectal abscess ...	–	1	1
Abscesses and toxaemia ...	1	–	1
Carcinoma uteri	–	1	1
Chronic nephritis	–	1	1
Malaria	–	1	1
Total	16	7	23

From the above table it will be seen that General paralysis of the Insane accounted for 8.7% of total deaths, as against 14.6% for all County and Borough Mental hospitals in England and Wales for 1925. 5 postmortem examinations were made, giving a percentage of 21.7 of total deaths.

13.—PREVALENCE OF SICKNESS

The following table gives the number of cases treated in both Infirmaries, the daily average of sick and the sick rate for the year 1926 and 1927 :—

	1926			1927		
	M	F	T	M	F	T
No. of cases treated in Infirmaries ...	161	117	278	149	85	234
Daily average of sick in Infirmaries...	3.66	2.98	6.64	5.24	2.87	8.11
Sick rate per cent calculated on daily average in hospital ..	1.03	1.14	1.13	1.53	1.05	1.32

14.—TABLE OF MONTHLY ADMISSIONS INTO THE TWO INFIRMARIES, TOTAL STAY THEREIN AND AVERAGE STAY PER PATIENT FOR THE YEARS 1926, 1927 :—

	1926				1927		
Months	M	F	T	Months	M	F	T
January	28	15	43	January ...	25	9	34
February ...	16	8	24	February ...	9	2	11
March	10	19	29	March ...	28	13	41
April	16	12	28	April ...	7	8	15
May	15	18	33	May ...	10	8	18
June	10	8	18	June ...	8	5	13
July	11	8	19	July ...	9	7	16
August	10	5	15	August ...	12	5	17
September ...	15	12	27	September ...	14	7	21
October	10	3	13	October ...	15	6	21
November ...	11	4	15	November ...	6	5	11
December ...	9	5	14	December ...	6	10	16
Total	161	117	278	Total .	149	85	234
Total stay in days...	1,373	1,151	2,524	Total stay in days...	1,786	1,047	2,833
Average stay per patient ...	8.52	9.83	9.07	Average stay per patient ...	11.99	12.31	12.10

The above table shows that although there were fewer admissions into the two Infirmaries in 1927, as compared with 1926, yet, the average stay per patient was longer in 1927. This is accounted for by the fact that the few patients admitted for such diseases as phthisis, bronchiectasis, gastric ulcer, anal fistula, chronic nephritis and fractured femur stayed a considerable time in hospital. For instance, 3 cases of phthisis spent an average of 91 days each in the Infirmary, and a case of bronchiectasis 102 days.

15.—THE FOLLOWING TABLE SHOWS THE MONTHLY ADMISSIONS INTO BOTH INFIRMARIES FOR THE COMMONER DISEASES :—

Diseases	January	February	March	April	May	June	July	August	September	October	November	December	Total
Influenza	10	...	23	...	3	2	3	4	1	3	...	6	55
Malaria	1	3	2	4	6	...	4	3	1	1	2	1	28
Amoebic dysenfery ...	1	3	2	...	2	4	...	2	5	1	...	...	20
Abscess	...	...	2	1	1	1	1	1	2	1	1	2	13
Wounds, accidental ...	...	...	2	1	1	...	...	...	...	4	...	...	8
Boils	...	2	...	...	...	2	1	...	1	...	...	1	7
Cellulitis	...	...	1	...	...	...	...	...	1	3	1	1	7
Chronic Nephritis ...	...	...	...	1	2	...	...	...	1	1	1	...	6
Pneumonia	1	...	2	...	1	1	...	...	...	...	...	1	6
Carbuncle	...	...	2	...	...	...	1	...	...	2	...	...	5
Asthma	2	...	...	...	...	...	...	1	...	1	...	...	4
Epilepsy	...	1	..	...	...	...	1	...	...	...	1	...	3
Phthisis	...	...	...	2	...	...	1	...	...	...	...	...	3
Heart disease ...	...	...	1	...	...	...	...	1	...	...	...	...	2
Chronic bronchitis ...	2	...	...	..	...	...	...	...	...	...	...	...	2
General paralysis of the insane	...	...	...	...	1	...	...	...	...	...	1	...	2

16.—INFECTIOUS AND ALLIED DISEASES

There were no cases of enteric fever. Dysentry cases, numbered 20, with 3 deaths. It is stated that bacillary dysentery is exceptionally rare in Mauritius. It is proposed to study carefully our dysenteric cases when the hospital laboratory is fitted up.

There were 55 cases of Influenza and 28 of malaria during 1927, as compared with 38 and 25, respectively, in 1926.

During the year, 3 cases of phthisis needed active treatment; one of them died. At present 3 patients are known to suffer from phthisis. There were no other forms of tuberculosis among our patients.

17.—Escape Violence &c.

Three patients escaped during the year; two of these were captured and brought back to hospital a few hours after their absence had been noticed—The third escape, a male patient, left hospital on 5.3.27, was apprehended by the Police and brought back to hospital on 8.4.27. There were no cases of homicide or of suicide during the year.

The types and number of cases of injury sustained by patients were as follows :—

Self inflicted	12
Inflicted by other patients	29
" " attendants	Nil
" " accidentally	35

All these injuries were of a trivial nature, except one, a fractured femur caused through an accidental fall.

18.—Treatment

The treatment of Epilepsy by Luminal combined with bromides was continued during the year. In many cases the combination proved no better than bromides alone, either in reducing the number of fits or in improving the mental state of patients. There is no doubt, however, that for certain cases Luminal is most beneficial—For instance, one of our female epileptics remains rational and well-behaved on ¾ grain of Luminal a day, but no sooner is the drug cut off than she becomes irritable, troublesome, emotional and her fits increase in number. Some epileptics, on the other hand, are unable to tolerate doses even smaller than the above; in these the drug produces marked excitement or dullness to the point of semi-stupor.

During the year particular attention was paid to the detoxication of patients in whom sepsis was considered a causal factor in the production of their psychoses. Milk diet, Dimol and other intestinal antiseptics, salines, and the surgical treatment of toxic foci were the chief weapons used in the fight against focal infection, with, in a few cases, gratifying results.

The following description of a case of toxic insanity shows a rapid recovery that followed dental extraction for marked pyorrhoea alveolaris :—

Mr. G. V., aged 44, was admitted to hospital on 11.7.27. It was stated that there was no history of insanity, epilepsy or alcoholism in his family. He himself was a moderate drinker and had not previously suffered from any serious illness. His present trouble started on 4.7.27 with excitement, hallucinations and delusions of persecution. When admitted here he was found to be markedly disorientated for time, place and persons, confused, emotionally unstable, weeping without any apparent provocation, difficult over food because, he alleged, it contained dirt. He was very hallucinated, especially for sight. He saw one Lazarre who wished to stab him; saw his father in the sun, heard him say he ought to tear his shirt and promptly put the advice into action. Physically he was in fairly good condition except for a moderately enlarged spleen—He weighed 70 kilos—He was sent to bed, given a brisk purge and put on quinine, grains 10 three times a day, for a week. On 20.7.27 the quinine was stopped and he was ordered Mist: Pot: Brom three times a day on account of marked excitement. Sulphonal, grains 20, was occasionally administered for insomnia. He was also given a special diet in which milk figured prominently. Under the above treatment his mental state showed little improvement and on 10.12.27 the following note was made : " weighs 60.200 kilos—anaemic—still delusional and disorientated maintains his name is Z... and not V.. — One of the patients, he says, is his brother—difficult over food— hallucinated— "

On 14.12.27 he was found to suffer from furunculosis of both forearms and hands and four days later, his teeth— 10 in all were extracted, the gums oozing pus. On 3.1.28 the furunculosis was completely cured and a note made at the time stated " quiet, well orientated, rational! " He was discharged as recovered on 11.2.28.

It may be argued that as this man had an enlarged spleen he was probably a malarial subject and that the preliminary quinine medication improved his malaria and the correlated mental symptoms. It must be remembered, however, that the quinine was given for about a week only and this, months before the dramatic improvement of his mental condition—In presence of the furunculosis, the anaemic and emaciated state of the patient in December 1927, the then practically unchanged mental state, to the very pussy gums, and the rapid disappearance of bodily and mental symptoms following the extraction of his teeth, I think one is justified in regarding this case as one of mental illness due to focal sepsis in which rapid recovery ensued as a result of the removal of the source of infection.

19.—Occupational Treatment

No workshops are at present available. It is hoped to remedy this defect in the near future. During the year a daily average of 37 male patients, mostly Indians, attended to the vegetable gardens. All the laundry of the hospital was done by female patients and this, together with ward work, kitchen work, darning, the upkeep of the hospital grounds, gave employment daily to an average of 143 male and 83 female patients. The estimated value of the work done by patients during the year was Rs. 15,085.66.

20.—Restraint and Seclusion

Mechanical restraint—leather wristlets and strong dresses—was resorted to in the case of 9 male and 14 female patients, and seclusion in the case of 1 man and 9 women.

21.—Recreation

During 1927 the Police Band played once a month at the hospital. Two "treats" were given consisting of cakes, fruit, lemonade and other delicacies. These were followed, in each case, by a cinematograph performance—Gramophone music is played during the week and always on Sundays—Cards, draughts, dominoes, chess and loto are favourite games. A few of the male patients play football on the grounds of the hospital. French and English papers and periodicals were sent us by people interested in the welfare of our patients, but the numbers received were far below our requirements. We would be very grateful if more kind-hearted persons could send us their old papers and magazines, especially the illustrated ones. The piano in the female department was occasionally used by friends and relatives of patients.

22.—Law Changes.

G.N. No. 257, dated 12.11.27, amending the diet scale, came into force during the year.

23.—Cost of Maintenance

The items making up the average weekly cost, per head, are given in the following table for the period 1.7.26 to 30.6.27 :—

Provisions, fuel, light, not including Institution garden produce		Rs. 129,184	16
Personal Emoluments		87,278	66
Clothing, bedding, uniforms, washing requisites		24,888	59
Surgery and dispensary—approximately—		5,000	...
Implements, stores and sundries		3,474	54
Fees for District Commissioners of Lunacy		1,875	...
Fees for Member of Central Board		315	...
Recreation for Patients		1,014	74
Telephones		215	...
Travelling and Tranport—approximately—		576	...
Casual Servants ...		191	...
Total		254,012	69
Less Fees received from for private patients :	Rs. 8,075.00		
Sale price of refuse food :	,, 300.00		
	Less	8,375	...
Net total expenditure		245,637	69
Average weekly cost per head		7	91

It is intersting to compare our average weekly cost per head—11 s. 6½d. at the present rate of exchange of Rs. 13.78 per £ 1—with that of English County and Borough Mental Hospitals for 1925–26, namely, 22 s. 5⅝d.

24.—Staff Changes

On 8.5.27 Dr. L. N. R. Comty assumed duty as Assistant Medical Superintendent. Widow H. Silson and Miss F. Loizeau assumed duty as Nurses on 28.2.27 and 1.3.27, respectively.

On 3.2.27 Mr. L. Levaillant, Night gatekeeper, Civil Hospital, assumed duty as Gatekeeper. On 17.5.27 Mrs. M. Guillot was appointed Nurse. During the year Warder J. David and Gatekeeper Levaillant were confirmed in their respective posts. On 31.5.27 Nurse Marie stopped work on appointment as pupil midwife, Victoria Hospital, and was replaced by Widow M. Grec on 1.10.27.

On 1.6.27 Mr. G. E. F. Mason vacated the post of Steward and Accountant on transfer to Head Office as Medical Storekeeper, and was replaced by Mr. J. H. E. Letimier, our Head Attendant. Nurse Guillot, having resigned her post, stopped work on 28.8.27. Mr. G. Grenouille assumed duty as Warder on 25.8.27.

25.—BUILDINGS AND EQUIPMENT

The improvement of the accommodation and equipment made progress during the year. An administrative block containing a pharmacy, various offices for the staff, an operating theatre, an anaesthetic room, a sterilizing room, pathological laboratory, is practically completed. The operating block and the laboratory have not been equipped—Work on the extension and alteration of the male infirmary and its conversion into an admission block is nearing completion—A female private quarter to contain 12 single rooms is being built and it is proposed shortly to start work on the erection of a female Admission block. Apparatus for continuous warm baths have been received but have not yet been installed.

26.—VISITS

On 24.10.27 His Honour the Officer Administering the Government, accompanied by the acting Medical Director and the acting Director of Public Works, visited the hospital. The Institution was also visited by the Honourable Colonial Secretary on 14.6.27 and by His Lordship the Bishop of Mauritius on 8.10.27. On 17.6.27 the Honourable Medical Director and the Honourable Member for Plaines Wilhems made a general inspection of the hospital and its Barkly annexe,

During the year the Central Board of Commissioners of Lunacy held 12 meetings at the hospital and, on each occasion, visited the Institution. Two Boards of Survey were held and our accounts and stores were checked twice by the Financial Assistant, Medical and Health Department, five times by the Assistant Colonial Auditor and once by an Audit Inspector. No irregularities were detected.

27.—RELIGIOUS SERVICES

During the year Mass was said on the first Friday of every month and an average of 42 patients attended on each occasion. The question of building a new Roman Catholic Chapel is under consideration. In December, Father La Chapelle, to the general regret of patients and staff alike, was compelled to stop his visits to the hospital. I wish here to record our appreciation of the excellent work done by Father La Chapelle who has, in spite of his advanced age, attended most assiduously, for many years, to the spiritual welfare of our patients.

Father Fresia, the Parish Priest of Beau Bassin, has been appointed as his successor.

The Reverend Mr. Duff paid several visits during the year to the few patients belonging to the Church of England.

To conclude, I wish to thank the Honourable Medical Director and the Members of the Central Board of Commissioners of Lunacy for their valuable help in improving the welfare of our patients.

Beau Bassin
29.3.27.

J. D. DYSON,
M.B.B.S. London; D.P.M.

APPENDIX II

REPORT ON THE HOOKWORM BRANCH FOR THE YEAR 1927.

ESTABLISHMENT

One Medical Officer
One Secretary
One Chief Field Man
Five Field Men
Three Microscopists
One Dispenser
One Caretaker

The writer assumed duty as Medical Officer in charge on 15th July 1927.

ORGANIZATION

The plan established by the representatives of the International Health Board has been maintained.

To the Central Office is attached a small laboratory where one microscopist examines all specimens forwarded by Government Institutions and by the public and also assists in giving treatment once a week.

Field work is carried out successively in each district of the Island.

In the district where operations are in progress there is a field laboratory to which are attached:

The Chief Field Man
Five Field Men
Two Microscopists
One Dispenser.

Work is distributed as follows:—

A certain number of sections is assigned to each Field Man who:

i. makes a house to house census.
ii. explains to the population the dangers of Hookworm disease, its cure and prophylaxis.
iii. distributes and collects specimen containers the contents of which are examined at the field laboratory.
iv. assembles people for treatment which is given daily.

On the Medical Officer in charge rest; the propaganda work (lectures and conferences), the administration of treatment and the general supervision of the branch.

EXTENT OF OPERATIONS

Besides dispensary and school work carried out in Port Louis all the year round, three districts have successively been attended to:

The campaign in Pamplemousses ended in March 1927.

That in Rivière du Rempart opened on April 1st and was closed on October 31st.

Flacq was started on November 1st.

The work done may be summarized as follows:—

	Examination	Treatment
Port Louis	4,379	2,260
Pamplemousses	4,928	3,103
Rivière du Rempart	17,642	10,172
Flacq	11,629	2,513
Total	38,578	18,048

MICROSCOPIC EXAMINATION

The Willis method is employed and has given the following percentages of infection for the year under review:—

Port Louis	59.6
Pamplemousses	73
Rivière du Rempart	72.8
Flacq	77

Whether the above figures demonstrate accurately the true rate of infection is questionable.

Darling and Smilie (1921) and Smillie (1922)* gave to forty-nine cases two treatments with oil of chenopodium. Twenty days after the second treatment they were examined by the routine technique of their laboratory, the details of which are not noted, but which appears to have been that of Howard (1915). This technique pronounced twenty-one of them as negative. These negative cases were given a third treatment and twelve of them passed ankylostomes. The conclusion is that under these circumstances "it is futile to attempt to determine by the microscope whether or not the ultimate worm has been removed."

The seventh Annual Report of the International Health Board contains the following comment upon these cases:—

"It has been shown that diagnosis by microscopic examination fails in about 50 per cent of lightly infected cases."

Further, G. H. E. Hopkins, B.A., F. E. S.,† who carried out certain investigations at the request of the Administration of Western Samoa reports as follows:—

"A series of 54 specimens from individuals taken at random from the patients and staff in the Apia Hospital, Samoa, was examined in order to compare the accuracy of the Clayton Line and Willis techniques ... ...

... ...

Of the 54 individuals examined the Clayton Lane method showed 92.6% to be infected, while by the Willis method the number found infected was 87%."

"From seven individuals who were lightly infected, several specimens (19 in all) were examined by both methods on different days. Of those 19 specimens the Clayton Lane method showed 14 (7 individuals) positive for hookworm while the Willis method showed only 4 specimens (3 individuals) positive."

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* Transactions of the Royal Society of Tropical Medicine and Hygiene Vol. XVI, Nos. 5 and 6.

† Transactions of the Royal Society of Tropical Medicine and Hygiene, Vol. XVII, No. 8.

From the above quotations it is evident that even in experts' hands the microscope does not always reveal the presence of ova in the stools and that the results obtained may vary with the technique used.

The percentage obtained in Mauritius is based on the examination of but one specimen. It must therefore be looked upon chiefly as an indication of gross infection and it is assumed that 20% could be added to each figure in order to obtain the true rate of infection for the districts under review.

This would give an average infection of about 90%, a very high figure indeed but, it is believed, a true one.

As may be judged from clinical evidence the degree of infestation is also very high in a large proportion of cases.

TREATMENT

The drugs used are :

Oil of Chenopodium,
Tetrachloride of Carbon.

Children up to about 15 years of age are treated with the following mixture :

Oil of Chenopodium	...	...	one part
Tetrachloride of Carbon	...	...	two parts

in doses of 0.1 c.c. per apparent year of age.

Adults are given Tetrachloride of Carbon only in doses of from 1 to 2 c.c according to physical condition.

Whatever drug or combination of drugs is given it is immediately followed by a dose of Magnesium Sulphate in 25% sclution.

The dose of Tetrachloride of Carbon may appear somewhat small but the writer's experience is that the physical condition of both the Indian and General Population precludes the use of higher doses especially in field work when post treatment supervision is impossible.

GENERAL REMARKS

Uncinariasis, in Mauritius, was first noted in Flacq by Dr. Aimé Lesur in 1895.

Various anthelminthics were tried but no systematic measures were taken against the disease until long after.

In 1920, Dr. J. F. Kendrick of the International Health Board paid a visit to the Colony and made an infection survey. His findings were such, that he concluded his report as follows :

" The results of this investigation indicate that hookworm disease has assumed proportions which constitute a definite menace to the health and well-being of the population."

On his recommendation the International Health Board agreed to conduct an intensive campaign for the relief and control of Uncinariasis on condition that soil sanitation would be carried out in advance.

It was not however until November 1922—six months after the arrival of the representative of the Rockefeller Institute—that the Medical and Health Department took definite steps towards the soil sanitation of the Island.

The construction of pit or pail latrines—according to the suitability of the soil—took nearly five years, and if, at the present day, a large proportion of dwellings has been providedwith a privy, the most ardous part of the work, namely : education of the mass of the population, remains to be done.

It is impossible to know when the hookworm was first introduced into the Colony, but it is likely that the disease has developed almost freely for 40 or 50 years.

To-day the most casual observer cannot fail to note a marked degeneration of the race. Not only has the physical appearance become more frail but those who mingle with the labouring classes agree that the capacity for work has declined.

The above changes are strikingly apparent in the primary schools where a high percentage of children appear weakly and under-aged.

This is undoubtedly due to hookworm disease aggravated, in the coastal districts, by Malaria.

Of the other possible bearings of Uncinariasis on the social economics of the Colony, its relation to Alcoholism might be mentioned. The number of persons addicted to alcohol has materially increased during the past twenty years. Considering that Uncinariasis is one of the greatest, if not the greatest, debilitating disease, it is conceivable that those afflicted by it should feel a craving for a stimulant. Further, many men and even women have confessed that they had recourse to alcohol solely to combat a feeling of extreme lassitude.

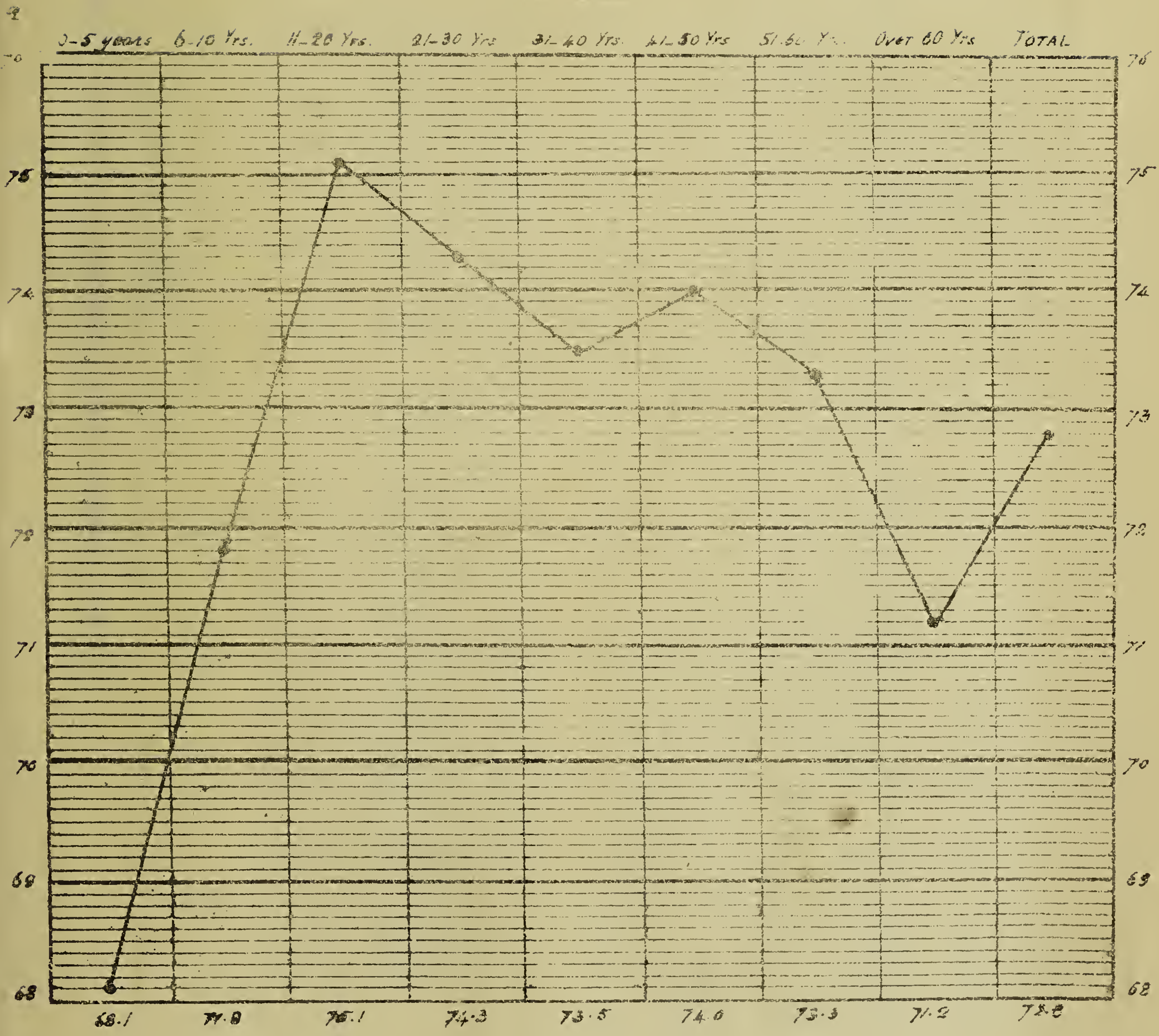
In any case, hookworm disease appears to be the greatest scourge of the country and remains the pre-eminent problem of sanitation.

A. C. D'ARIFAT,
Medical Officer in charge, Hookworm Branch.

HOOKWORM CONTROL

(MAURITIUS)

Percentage of Infection by Ages during the Year 1927
(Vide Comments par. 1 of Report)



HOOKWORM CAMPAIGN WORK—MAURITIUS—FOR THE YEAR 1927.

	Census	Classification by Age																Total		Percentage of infection.
		0-5		6-10		11-20		21-30		31-40		41-50		51-60		Over 60				
		Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	
Port Louis ...	5,023	692	227	1,055	679	1,062	734	687	484	455	270	255	144	124	60	49	23	4,379	2,621	59.8
Pamplemousses ...	23,129	751	526	626	465	992	723	1,102	836	744	535	435	327	222	182	56	34	4,928	3,598	73.
Rivière du Rempart ...	26,100	3,164	2,255	3,300	2,362	3,695	2,768	3,426	2,471	2,178	1,599	1,221	907	511	389	147	108	17,642	12,859	72.8
Flacq ...	17,217	2,053	1,528	1,734	1,316	2,355	1,863	2,369	1,847	1,633	1,282	966	753	368	297	151	122	11,629	9,008	77.4
Total ...	71,469	6,660	4,536	6,715	4,822	8,104	6,088	7,584	5,638	5,010	3,686	2,877	2,131	1,225	898	403	287	38,578	28,086	72.8

	Classification by Race								Other Helminths					Treatments					Re-examinations after treatment									
	Mixed		Indian		Chinese		White												1		2		3		4		Total	
	Examined	Infected	Examined	Infected	Examined	Infected	Examined	Infected	Ascaris	Tricho	Strongy	Oxyuris	Taenia	First	Second	Third	Fourth	Total	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Port Louis ...	2,233	1,121	1,783	1,382	136	59	227	59	2,022	2,621	56	149	10	1,357	635	236	32	2,260	21	61	21	65	30	148	12	11	84	285
Pamplemousses ..	373	228	4,538	3,357	16	13	1	...	948	106	14	5	15	3,040	62	1	...	3,103	5	113	5	143	...	...	...	...	10	256
Moka ...	...	...	...	...	...	...	...	...	...	...	...	...	...	45	7	...	...	52	...	...	...	...	...	...	...	...	...	...
Riv. du Rempart ...	2,127	1,477	15,457	11,341	58	41	...	...	3,653	269	66	15	154	9,377	795	...	...	10,172	10	151	5	145	...	...	...	...	15	296
Flacq ...	1,594	1,187	9,975	7,783	58	38	2	...	1,783	284	62	6	1	2,462	51	..	...	2,513	...	...	...	...	...	...	...	...	...	...
Total ...	6,327	4,013	31,753	23,863	268	151	230	59	8,406	3,280	198	175	180	16,281	1,550	237	32	18,100	36	325	31	353	30	148	12	11	109	837

APPENDIX III

RETURN OF DISEASES (*Out Patients*) FOR THE YEAR 1927

Diseases	Male	Female
I.—*Epidemic, Endemic and Infectious Diseases*		
1. Enteric Group—		
(*a*) Typhoid Fever	1	...
(*b*) Paratyphoid A.	...	...
(*c*) Paratyphoid B.	...	..
(*d*) Type not defined	...	...
2. Typhus	...	...
3. Relapsing Fever	...	...
4. Undulant Fever	..	...
5. Malaria—		
(*a*) Tertian	2,944	3,344
(*b*) Quartan	564	413
(*c*) Aestivo-autumnal	211	239
(*d*) Cachexia	887	919
(*e*) Blackwater	1	...
6. Smallpox—Undefined	5,988	6,291
Alastrim	...	...
7. Measles	...	...
8. Scarlet Fever	...	...
9. Whooping Cough	5	4
10. Diphtheria	...	...
11. Influenza	5,024	5,455
12. Miliary Fever	...	...
13. Mumps	1	...
14. Cholera		
15. Epidemic diarrhoea	1,060	870
16. Dysentry—		
(*a*) Amœbic	823	745
(*b*) Bacillary	29	31
(*c*) Undefined or due to other causes	274	260
17. Plague—		
(*a*) Bubonic	...	...
(*b*) Pneumonic	...	...
(*c*) Septicæmic	...	...
(*d*) Undefined	...	...
18. Yellow Fever	...	...
19. Spirochætosis ictero-Hæmorrhagica	...	...
20. Leprosy	...	...
21. Erysipelas	5	7
22. Acute Poliomyelitis	...	...
23. Encephalitis Lethargica	...	...
24. Epidemic Cerebro-spinal Fever	...	...
25. Other Epidemic Diseases—		
(*a*) Rubeola (German Measles)	...	...
(*b*) Varicella (Chicken-pox)	...	...
(*c*) Kala-azar	...	...
(*d*) Phlebotomus Fever	...	...
(*e*) Dengue	...	...
(*f*) Epidemic Dropsy	...	...
(*g*) Yaws	...	...
(*h*) Trypanosomiasis	...	..
26. Glanders	27	15
27. Anthrax	3	2
28. Rabies		...
29. Tetanus	3	2
30. Mycosis	2	...
31. Tuberculosis, Pulmonary and Laryngeal	6,542	2,352
32. Tuberculosis of the Meninges or Central Nervous System	...	...
33. Tuberculosis of the Intestine or Peritoneum	...	...
34. Tuberculosis of the Vertebral Column	...	...
35. Tuberculosis of Bones and Joints	2	...
Carried over	24,396	20,949

Diseases		Male	Female
Brought forward	...	24,396	20,949
36. Tuberculosis of other organs—			
(*a*) Skin or Subcutaneous Tissue (Lupus)	...	1	4
(*b*) Bones	...	...	...
(*c*) Lymphatic System	...	15	17
(*d*) Genito-urinary	...	2	2
(*e*) Other Organs	...	1	1
37. Tuberculosis disseminated—			
(*a*) Acute	...	...	..
(*b*) Chronic	...	...	...
38. Syphilis—			
(*a*) Primary	...	48	15
(*b*) Secondary	...	55	28
(*c*) Tertiary	...	80	40
(*d*) Hereditary	...	24	26
(*e*) Period not indicated	...	1	3
39. Soft Chancre	...	10	...
40. A.—Gonorrhœa and its complications	...	191	34
B.—Gonorrhœal Ophthalmia	...	1	1
C.—Gonorrhœal Arturitis	...	7	8
D.—Gonorrhœal Venereum	...	...	...
41. Septicæmia	..	...	...
42. Other Infectious Diseases—	...	77	72
(*a*) Trypanosomiasis	...	...	...
(*b*) Filariosis	...	..	...
II.—*General Diseases not mentioned above*			
43. Cancer or other malignant Tumours of the Buccal Cavity	...	..	1
44. Cancer or malignant Tumours of the Stomach or Liver	...	1	...
45. Cancer or other malignant Tumours of the Peritoneum Intestines, Rectum	...	...	...
46. Cancer or other malignant Tumours of the Female Genital Organs	...	..	...
47. Cancer or other malignant Tumours of the Breast	...	...	1
48. Cancer or other malignant Tumours of the Skin		...	...
49. Cancer or other malignant Tumours or Organs not specified	...	..	1
50. Tumours non-Malignant	...	3	4
51. Acute Rheumatism	...	570	846
52. Chronic Rheumatism	...	358	480
53. Scurvy (including Barlow's Disease)	...	...	...
54. Pellagra	...	...	...
55. Beri-Beri	...	...	8
56. Rickets	...	17	6
57. Diabets (not including Insipidus)	...	10	5
58. Anæmia—			
(*a*) Pernicious	...	64	127
(*b*) Other Anæmias and Chlorosis	...	808	1262
59. Diseases of the Pituitary Body	...	..	...
60. Diseases of the Thyroid Gland	...	...	...
(*a*) Exophthalmic Goitre	...	..	...
(*b*) Other diseases of the Thyroid Gland, Myxœdema	...	...	...
61. Diseases of the Para-Thyroid Glands	...	1	1
62. Diseases of the Thymus	...	...	...
63. Diseases of the Supra-Renal Glands	...	...	...
64. Diseases of the Spleen	...	108	104
65. Leukæmia—			
(*a*) Leukæmia	...	...	...
(*b*) Hodgkin's Disease	...	...	...
66. Alcoholism	...	...	...
67. Chronic poisoning by mineral substances (lead, mercury, &c.)	...	...	...
68. Chronic poisoning by organic substances (Morphia, Cocaine, &c.)	...	...	...
Carried over	...	26,849	24,046

Diseases	Male	Female
Brought forward ...	26,849	24,046
69. Other General Diseases—		
Auto-intoxication ...	...	...
Purpura Hæmorrhagica ..	1	3
Hæmophilia ...	2	1
Diabetes Insipidus ...	2	...
Undefined ...	123	278
III.—*Affections of the Nervous System and organs of the senses*		
70. Encephalitis (not including Encephalitis Lethargica ...	14	26
71. Menengitis (not including Tuberculous Meningitis or Cerebrospinal Meningitis ...	1	1
72. Locomotor Ataxia ...	1	...
73. Other affections of the Spinal Cord ..	...	...
74. Apoplexy—		
(*a*) Hæmorrhage ...	12	5
(*b*) Embolism ...	...	...
(*c*) Thrombosis ...	...	...
75. Paralysis—		
(*a*) Hemiplegia ...	12	8
(*b*) Other Paralyses ...	7	6
76. General Paralysis of the Insane ...	2	1
77. Other forms of Mental Alienation ...	...	...
78. Epilepsy ...	84	82
79. Eclampsia, Convulsions (non-puerperal) 5 years or over ...	...	...
80. Infantile Convulsions ...	46	40
81. Chorea ...	...	1
82. A.—Hysteria ...	1	38
B.—Neuritis ...	18	3
C.—Neurasthenia ...	98	95
83. Cerebral Softening ...	1	...
84. Other affections of the nervous System, such as Paralysis Agitans ...	113	170
85. Affections of the Organs of Vision—		
(*a*) Diseases of the Eye ...	105	93
(*b*) Conjunctivitis ...	290	255
(*c*) Trachoma ...	...	...
(*d*) Tumours of the Eye ...	...	...
(*e*) Other affections of the Eye ...	119	139
86. Affections of the Ear or Mastoid Sinus ...	272	234
VI.—*Affections of the Ciculatory System*		
87. Pericarditis ...	10	8
88. Acute Endocarditis or Myocarditis ..	3	4
89. Angina Pectoris ...	1	...
90. Other Diseases of the Heart Undefined ...	17	37
(*a*) Vulvular—		
Mitral ...	150	120
Aortic ...	23	39
Tricuspid ...	...	...
Pulmonary ...	12	...
(*b*) Myocarditis ...	2	3
91. Diseases of the Arteries—		
(*a*) Aneurism ...	...	...
(*b*) Arterio-Sclerosis ...	61	91
(*c*) Other diseases ...	6	57
92. Embolism or Thrombosis (non-cerebral) ...	...	...
93. Diseases of the Veins—		
Hæmorrhoids ...	82	52
Varcicose Veins ...	23	2
Phlebitis ...	28	1
94. Diseases of the Lympatic System-Lymphangitis	59	61
Lymphadenitis, Bubo (non-specific) ...	30	24
95. Hæmorrhage of undetermined cause ...	3	11
96. Other effections of the Circulatory System ...	44	71
Carried over	28,727	26,106

	Diseases	Male	Female
	Brought forward	28,727	26,106
	V.—*Affections of the Respiratory System*		
97.	Diseases of the Nasal Passages—		
	Adenoids	9	7
	Polypus	4	10
	Rhinitis	5	10
	Coryza	5	18
98.	Affections of the Larynx—		
	Laryngitis	8	17
99.	Brenchitis—undefined	48	41
	(*a*) Acute	1,454	1,316
	(*b*) Chronic	644	598
100.	Broncho-Pneumonia	16	14
101.	Pneumonia		
	(*a*) Lobar	18	9
	(*b*) Unclassified	79	29
102.	Pleurisy, Empyema	26	18
103.	Congestion of the Lungs	2	...
104.	Gangrene of the Lungs	...	...
105.	Asthma	577	406
106.	Pulmonary Emphysema	...	1
107.	Other affections of the Lungs—	442	521
	Pulmonary Spirachætosis	...	...
	VI.—*Diseases of the Digestive System*		
108.	A.—Diseases of Teeth or Gums—		
	Caries, Phorrhæa, &c.	887	820
	B.—Other affections of the Mouth—		
	Stomatitis	117	165
	Glossitis, &c.	12	10
109.	Affectiont of the Pharynx or Tonsils—		
	Tonsillitis	89	99
	Pharyngitis	27	28
110.	Affections of the Œsophagus	...	...
111.	A.—Ulcer of the Stomach	4	4
	B.—Ulcer of the Duodenum	...	1
112.	Other affections of the Stomach—		
	Gastritis	526	647
	Dyspepsia, etc.	878	1,354
113.	Diarrhœa and Enterits—		
	Under two years	612	542
114.	Diarrhœa and Enteritis—		
	Two years and over	789	611
	Colitis	163	151
	Ulceration	1	2
114a.	Sprue	...	...
115.	Ankylostomiasis	1,484	1,875
116.	Diseases due to Intestinal Parasites—		
	(*a*) Cestoda (Tænia)	...	...
	(*b*) Trematoda (Flukes)	...	...
	(*c*) Nematoda (other than Ankylostoma)—		
	Ascaris	1,356	1,143
	Trichocephalus dispar.	...	...
	Trichina	...	...
	Dracunculus	...	...
	Strongylus	...	...
	Oxyuris	10	8
	(*d*) Coccidia	...	...
	(*e*) Other parasites	5	20
	(*f*) Unclassified	592	651
117.	Appendicitis	20	20
118.	Hernia	61	7
119.	A.—Affections of the Anus, Fistula, &c.	29	24
	B.—Other affections of the Intestines—		
	Enteroptosis	14	26
	Constipation	508	644
120.	Acute yellow Atrophy of the Liver	15	14
121.	Hydatid of the Liver	...	...
	Carried over	40,263	37,987

Deseases	Male	Female
Brought forward	40,263	37,987
122. Cirrhosis of the Liver	...	...
(*a*) Alcoholic	31	6
(*b*) Other forms	6	2
123. Billiary Calculus	...	1
124. Other affections of the Liver—		
Abscess	47	41
Hepatitis	94	41
Cholecystitis	4	2
Jaundice	57	43
125. Diseases of the Pancreas	...	...
126. Peritonitis (of unknown cause)	...	...
127. Other affections of the Digestive System	295	257
VII.—*Diseases of the Genito-urinary System (non-Veneral)*		
128. Acute Nephritis	250	175
129. Chronic	109	88
130. A.—Chyluria	5	2
B.—Schistosomiasis	46	28
131. Other affections of the Kidneys—		
Pyelitis, etc.,	8	1
132. Urinary Calculus	65	36
133. Diseases of the Bladder—		
Cystitis	117	55
134. Diseases of the Urethra—		
(*a*) Stricture	6	...
(*b*) Other	7	3
135. Diseases of Prostrate—		
Hypertrophy	...	...
Prostatitis	...	...
136. Diseases (non venereal) of the Genital Organs of Man—		
Epididymitis	19	...
Orchitis	91	...
Hydrocele	57	...
Ulcer of Penis	5	...
137. Cysts or other non-malignant Tumours of the Ovaries	...	2
138. Salpingitis—		
Abscess of the Pelvis	...	8
139. Uterine Tumours (non-malignant)	...	...
140. Uterine Hæmorrhage non-puerperal—	...	79
141. A.—Metritis	...	12
B.—Other affections of the Female Genital Organs-	...	118
Displacements of Uterus	...	13
Amenorrhœa	...	193
Dysmenorrhœa	...	173
Leucorrhœa	...	139
142. Diseases of the Breast (non-puerperal—)		
Mastitis	2	12
Abscess	4	24
VIII.—*Puerperal State*		
143. A.—Normal Labour	...	141
B.—Accidents of Pregnancy—		
(*a*) Abortion	...	20
(*b*) Ectopic Gestation	...	...
(*c*) Other accidents of Pregnancy	...	17
144. Puerperal Hæmorrhage	...	17
145. Other accidents of Parturition	...	5
146. Puerperal Septicæmia	...	...
147. Phlegmasia Dolens	...	...
148. Puerperal Eclampsia	...	...
149. Sequelæ of Labour	...	...
150. Puerperal affections of the Breast	...	...
Corried over	41,588	39,741

Disseaes	Male	Female
Brought forward	41,588	39,741
IX.—*Affections of the Skin and Cellular Tissues*		
151. Gangrene	47	28
152. Boil—		
Carbuncle	72	37
153. Abscess—	185	52
Whitlow	111	65
Cellulitis	251	171
154. A.—Tinea	...	...
B.—Scabies	321	315
155. Other Diseases of the Skin—	153	87
Erythema	...	1
Urticaria	30	25
Eczema	291	295
Herpes	32	32
Psoriasis	20	6
Elephantiasis	6	1
Myiasis	...	...
Chigœs	...	...
Cutaneous Leishmaniasis	...	...
X.—*Diseases of the Bones and Organs of Locomotions (other than Tuberculous)*		
156. Diseases of the Bones—		
Osteitis	47	43
157. Diseases of Joints—		
Arthritis	16	13
Synovitis	18	16
158. Other Diseases of Bones or Organs of Locomotion	36	42
XI.—*Malformations*		
159. Malformations—		
Hydrocephalus	1	1
Hypospadias	...	...
Spina Bifida, &c.	1	...
XII.—*Diseases of Infancy*		
160. Congenital Debility	48	70
161. Premature Birth	...	...
162. Other affections of Infancy	15	20
163. Infant neglect (infants of three months or over)	...	...
XIII.—*Affections of Old Age*		
164. Senility—		
Senile Dementia	239	257
XIV.—*Affections produced by External Causes*		
165. Suicide by Poisoning	...	...
166. Corrosive Poisoning (intentional)	...	...
167. Suicide by Gas Poisoning	...	...
168. Suicide by Hanging or Strangulation	...	...
169. Suicide by Drowning	...	...
170. Suicide by Firearms	...	...
171. Suicide by cutting or stabbing Instruments	...	...
172. Suicide by jumping from a height	...	...
173. Suicide by crushing	...	...
174. Other Suicides	...	...
175. Food Poisoning—		
Botulism	2	...
176. Attacks of poisonous	...	...
Snake Bite	...	...
Insect Bite	2	...
177. Other accidental Poisonings	...	...
178. Burns (by Fire)	33	35
179. Burns (other than by Fire)	6	7
180. Suffocation (accidental)	...	...
181. Poisoning by Gas (accidental)	...	...
182. Drowning (accidental)	...	...
183. Wounds (by Firearms, war excepted)	1	...
184. Wounds (by cutting or stabbing Instruments)	304	124
185. Wounds (by Fall)	290	98
186. Wounds (in Mines or Quarries)	...	...
Carried over	44,166	415,82

Diseases	Male	Female
Brought forward ...	44,166	41,582
187. Wounds (by Machinery) ...	6	...
188. Wounds (crushing *e.g.* railway accidents, &c.)...	.	...
189. Injuries inflicted by Animals, Bites, Kicks, etc.	101	81
190. Wounds inflicted on Active Service ...	...	...
191. Executions of civilians by belligerents ...	...	...
192. A.—Over fatigue ...	...	...
B.—Hunger or Thirst ...	...	...
193. Exposure to Cold, Frost bite &c. ...	...	...
194. Exposure to heat—		
Heatstroke ...	...	...
Sunstroke ...	...	...
195. Lighting Stroke ...	...	...
196. Electric Shock ...	...	...
197. Murder by Firearms ...	...	...
198. Murder by cutting or stabbing Instruments ...	...	...
199. Murder by other means ...	...	...
200. Infanticide (Murder of an infant under one year)	...	...
201. A.—Dislocation ...	24	14
B.—Sprain ...	54	31
C.—Fracture ...	37	18
202. Other external Injuries ...	314	147
203. Deaths by Violence of unknown cause ...	...	...
XV.—*Ill-Defined Diseases*		
204. Sudden Deaths (cause unknown)—		
205. A.—Diseases not already specified or ill-defined—		
Ascites ...	161	249
Œdema ...	51	23
Asthenia ...	28	29
Shock ...	13	33
Hyperpyrexia ...	5	2
B.—Malingering ...	4	2
XVI.—*Diseases the total of which have not caused 10 Deaths* ...	83	113
Total ..	45,047	42,324

Summary

Diseases	Male	Female	Total
I.—Epidemic, Endemic and Infectious Diseases ...	24,909	21,200	46,109
II.—General Diseases not mentioned above ...	2,068	3,128	5,196
III.—Affections of the Nervous System and Organs of the Senses	1,196	1,197	2,393
IV.—Affections of the Circulatory System	554	581	1,135
V.—Affections of the respiratory System	3,337	3,015	6,352
VI.—Diseases of the Digestive System	8,733	9,259	17,992
VII.—Diseases of the Genito-Urinary System (*non-venereal*) ...	791	1,161	1,952
VIII.—Puerperal State	...	200	200
IX.—Affections of the Skin and Cellular Tissues ...	1,519	1,115	2,634
X.—Diseases of Bones and Organs of Locomotion (*other than Tuberculous*)	117	114	231
XI.—Malformations	2	1	3
XII.—Diseases of Infancy	63	90	153
XIII.—Affections of Old age	239	257	496
XIV.—Affections produced by external Causes ...	1,174	555	1,729
XV.—Ill-Defined Diseases	262	338	600
XVI.—Diseases, the total of which have not caused 10 Deaths...	83	113	196
Total ...	45,047	42,324	87,371
In 1926	...	...	48,637

APPENDIX IV

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1927.

Diseases	Remaining in Hospital at end of 1926	Yearly Total		Total cases treated	Remaining in Hospital at end of 1927
		Admissions	Deaths		
1.—*Epidemic, Endemic and Infectious Diseases*					
1. Enteric Group—					
(*a*) Typhoid Fever ..	6	61	9	67	...
(*b*) Paratyphoid A. ...	...	...	...	...	...
(*c*) Paratyphoid B. ...	...	...	...	...	...
(*d*) Type not defined ...	...	...	...	...	...
2. Typhus ...	...	...	...	...	...
3. Relapsing Fever ...	...	...	...	...	...
4. Undulant Fever ..	...	...	...	...	...
5. Malaria Undefined ...	20	954	13	974	8
(*a*) Tertian ...	14	1,222	16	1,236	9
(*b*) Quartan ...	2	142	...	144	...
(*c*) Aestivo-autumnal ...	4	...	...	4	...
(*d*) Cachexia ...	5	271	14	276	4
(*e*) Blackwater ...	...	3	1	3	...
6. Smallpox—					
Alastrim ...	...	...	...	...	...
7. Measles ...	...	1	...	1	...
8. Scarlet Fever ...	...		...	...	...
9. Whooping Cough ...	...	1	...	1	...
10. Diphtheria ...	...	10	1	10	...
11. Influenza ...	16	1,765	48	1,781	69
12. Miliary Fever ...	...	...	...	...	...
13. Mumps ...	...	...	...	...	...
14. Cholera ...	...	...	...	...	...
15. Epidemic diarrhœa ...	3	...	...	3	...
16. Dysentery—					
(*a*) Amœbic ...	10	619	31	629	4
(*b*) Bacillary ...	...	...	...	...	...
(*c*) Undefined or due to other causes ...	6	192	14	198	3
17. Plague—					
(*a*) Bubonic ...	...	3	...	3	...
(*b*) Pneumonic ...	...	..	...	...	...
(*c*) Septicaemic ...	...	...	...	...	...
(*d*) Undefined ...	...	...	...	...	...
18. Yellow Fever ...	...	...	...	...	...
19. Spirochaetosis ictero-hæmorrhagica ...	...	...	...	...	...
20. Leprosy ...	1	4	...	5	...
21. Erysipelas ..	...	32	4	32	...
22. Acute Poliomyelitis ...	...	...	...	...	...
23. Encephalitis Lethargica ...	...	...	...	...	...
24. Epidemic Cerebro-spinal Fever ...	...	...	...	...	...
25. Other Epidemic Diseases—					
(*a*) Rubeola (German Measles) ...	...	...	...	...	...
(*b*) Varicella (Chicken-pox) ...	...	10	...	10	...
(*c*) Kala-azar ...	...	...	...	...	...
(*d*) Phlebotomus Fever ...	...	...	...	...	...
(*e*) Dengue ...	...	...	...	...	...
(*f*) Epidemic Dropsy ...	...	...	...	..	...
(*g*) Yaws ...	...	..	...	...	...
(*h*) Trypanosomiasis ...	...	...	...	...	...
26. Glanders ...	...	...	...	...	...
27. Anthrax ...	...	4	1	4	...
28. Rabies ...	...	...	...	...	...
29. Tetanus ...	...	24	11	24	...
30. Mycosis ...	...	2	...	2	...
31. Tuberculosis, Pulmonary and Laryngeal ...	64	785	99	849	13
32. Tuberculosis of the Meninges or Central Nervous System ...	...	...	...	...	...
33. Tuberculosis of the Intestine or Peritoneum ...	...	8	1	8	1
Carried over ...	151	6,113	263	6,264	111

Diseases	Remaining in Hospital at end of 1926	Yearly Total		Total cases treated	Remaining in Hospital at end of 1927
		Admissions	Deaths		
Brought forward	151	6,113	263	6,264	111
34. Tuberculosis of the Vertebral Column	...	10	...	10	...
35. Tuberculosis of Bones and Joints	...	19	1	19	1
36. Tuberculosis of other organs—					
(*a*) Skin or Subcantaneous Tissue (Lupus)	...	8	...	8	1
(*b*) Bones	...	10	...	10	...
(*c*) Lymphatic System	...	17	...	17	...
(*d*) Genito-urinary	...	...	...	...	...
(*e*) Other Organs	...	...	...	...	...
37. Tuberculosis disseminated—					
(*a*) Acute	...	1	1	1	...
(*b*) Chronic	...	..	...	...	...
38. Syphilis—					
(*a*) Primary	5	54	...	59	1
(*b*) Secondary	5	59	...	64	...
(*c*) Tertiary	7	126	15	133	2
(*d*) Hereditary	...	16	...	16	...
(*e*) Period not indicated	...	66	...	66	...
39. Soft Chancre	...	30	...	30	...
40. A.—Gonorrhoea and its complications	8	268	...	276	5
B.—Gonorrhoeal Ophthalmia	...	...	...	...	...
C.—Gonorrhoeal Arthritis	...	4	...	4	...
D.—Granuloma Venereum	...	2	...	2	...
41. Septicæmia	1	16	12	17	...
42. Other Infectious Diseases—					
Trypanosomiasis	...	6	2	6	...
Filariasis	...	12	...	12	...
II—*General Diseases not mentioned above*					
43. Cancer or other malignant Tumours of the Buccal Cavity	...	8	...	8	...
44. Cancer or other malignant Tumours of the Stomach or Liver	2	13	2	15	1
45. Cancer or other malignant Tumours of the Peritoneum Intestines, Rectum	1	9	1	10	2
46. Cancer or other malignant Tumours of the Female Genital Organs	...	44	5	44	...
47. Cancer or other malignant Tumours of the Breast	..	18	1	18	1
48. Cancer or other malignant Tumours of the Skin	...	5	...	5	...
49. Cancer or other malignant Tumours or Organs not specified	3	16	3	19	...
50. Tumours non-malignant	1	45	...	46	1
51. Acute Rheumatism	6	187	2	193	4
52. Chronic Rheumatism	6	206	2	212	2
53. Scurvy (including Barlows's Disease)	...	1	...	1	...
54. Pellagra	...	...	...	...	...
55. Beri-Beri	...	6	...	6	...
56. Rickets	...	4	...	4	...
57. Diabets (not including Insipidus)	...	41	4	41	5
58. Anæmia—					
(*a*) Pernicious	3	22	2	25	...
(*b*) Other Anæmias and Chlorosis	10	473	10	483	...
59. Diseases of the Pituitary Body	...	...	...	...	...
60. Diseases of the Thyroid Gland—	...	...	...	...	...
(*a*) Exophthalmic Goitre	...	2	1	2	...
(*b*) Other diseases of the Thyroid Gland, Myxoedema	...	...	...	...	...
61. Diseases of the Para-Thyroid Glands	...	...	...	...	...
62. Diseases of the Thymus	...	...	...	...	...
63. Diseases of the Supra-Renal Glands	...	...	...	...	...
64. Diseases of the Spleen	...	106	1	106	...
65. Leukaemia—					
(*a*) Leukaemia	...	...	...	...	...
(*b*) Debility	1	29	5	30	...
Carried over	210	8,072	333	8,282	137

Diseases	Remaining in Hospital at end of 1926	Yearly Total		Total cases treated	Remaining in Hospital at end of 1927
		Admissions	Deaths		
Brought forward ...	210	8,072	333	8,282	137
66. Alcoholism ...	...	16	...	16	...
67. Chronic poisoning by mineral substances (lead mercury, &c.) ...	...	1	...	1	...
68. Chronic poisoning by organic substances (Morphia, Cocaine, &c.) ...	...	...	...	...	...
69. Other General Diseases—					
Auto-intoxication ...	...	...	...	...	...
Purpura Hæmorhagica ...	...	1	...	1	...
Hæmophilia ...	...	18	1	18	...
Diabetes Insipidus ...	2	3	...	5	...
Gout ...	...	1	...	1	...
III.—*Affections of the Nervous System and organs of the senses*					
70. Encephalitis (not including Encephalitis Lethargica ...	...	11	...	11	...
71. Meningitis (not including Tuberculus Meningitis or Cerebrospinal Meningitis) ...	...	11	7	11	...
72. Locomotor Ataxia ...	...	1	1	1	...
73. Other affections of the Spinal Cord ...	...	2	1	2	...
74. Apoplexy—					
(*a*) Hæmorrhage ...	1	28	14	29	..
(*b*) Embolism ...	...	...	...	...	...
(*c*) Thrombosis ...	...	..	...	...	...
75. Paralysis—					
(*a*) Hemiplegia ...	...	45	2	45	...
(*b*) Other Paralysis ...	...	26	...	26	...
76. General Paralysis of the Insane ...	...	9	2	9	...
77. Other forms of Mental Alienation ...	...	22	1	22	...
78. Epilepsy ...	1	50	2	51	2
79. Eclampsia, Convulsions (non-puerperal) 5 years or over ...	...	2	...	2	...
80. Infantile Convulsions ...	...	2	...	2	...
81. Chorea ...	1	3	...	4	...
82. A.—Hysteria ...	...	5	...	5	...
B.—Neuritis ...	3	37	...	40	...
C.—Neurasthenia ...	...	11	...	11	1
83. Cerebral Softening ...	...	18	...	18	...
84. Other affections of the nervous System, such as Paralysis Agitans ...	.	23	2	23	..
85. Affections of the Organs of Vision—					
(*a*) Diseases of the Eye ...	1	29	...	30	...
(*b*) Conjunctivitis ...	2	104	...	106	3
(c) Trachoma ..	...	1	...	1	...
(*d*) Tumours of the Eye ...	...	...	...	...	...
(*e*) Other affections of the Eye ...	3	325	...	328	3
86. Affections of the Ear or Mastoid Sinus	3	94	1	97	...
IV.—*Affections of the Circulatory System*					
87. Pericarditis ...	...	4	...	4	...
88. Acute Endocarditis or Myocarditis ...	...	...	...	...	...
89. Angina Pectoris ...	...	1	...	1	...
90. Other Diseases of the Heart—					
(*a*) Vulvular—					
Mitral ...	2	130	23	132	6
Aortic ...	...	7	1	7	...
Tricuspid ...	...	...	...	...	..
Pulmonary ...	...	...	...	...	...
(*b*) Myocarditis ...	...	7	4	7	...
Carried over ...	229	9,120	395	9,349	152

Diseases	*Remaining in Hospital at end of 1926	Yearly Total		†Total cases treated	‡Remaining in Hospital at end of 1927
		Admissions	Deaths		
Brought forward	229	9,120	395	9,349	152
91. Diseases of the Arteries—					
(*a*) Aneurism	...	1	...	1	...
(*b*) Arterio-Sclerosis	2	42	1	44	...
(*c*) Other diseases	...	2	1	2	...
92. Embolism or Thrombosis (non-cerebral)	...	2	...	2	...
93. Diseases of the Veins—					
Hæmorrhoids	1	72	...	73	1
Varcicose Veins	...	38	...	38	...
Phlebitis	...	4	...	4	...
94. Diseases of the Lymphatic System-					
Lymphangitis	...	47	...	47	...
Lymphadenitis, Bubo (non-specific)	2	91	...	93	1
95. Hæmorrhage of undetermined cause	...	4	2	4	...
96. Other affections of the Circulatory System	...	23	...	23	...
V.—*Affections of the Respiratory System*					
Senusitis	...	8	...	8	...
97. Diseases of the Nasal Passages—					
Hypertrophy Turbinæ	...	3	...	3	...
Adenoids	...	23	...	23	...
Polypus	...	12	...	12	...
Rhinitis	...	11	...	11	...
Coryza	...	1	...	1	...
98. Affections of the Larynx—					
Laryngitis	...	13	1	13	...
99. Bronchitis—					
(*a*) Acute	15	970	14	985	12
(*b*) Chronic	5	230	24	235	8
100. Broncho-Pneumonia	3	52	16	55	1
101. Pneumonia	..	...	...	...	...
(*a*) Lobar	4	114	28	118	2
(*b*) Unclassified	...	115	50	115	4
102. Pleurisy, Empyema	...	55	2	55	1
103. Congestion of the Lungs	...	4	2	4	...
104. Gangrene of the Lungs	...	6	3	6	...
105. Asthma	10	323	4	333	6
106. Pulmonary Emphysema	...	9	1	9	...
107. Other affections of the Lungs—					
Pulmonary Spirochætosis	...	19	2	19	...
VI.—*Diseases of the Digestive System.*					
108. A.—Diseases of Teeth or Gums—					
Caries, Pyorrhæa, &c.	...	95	...	95	...
B. Other affections of the Mouth—					
Stomatitis	...	17	...	17	...
Glossitis, &c.	...	7	1	7	...
109. Affections of the Parynx or Tonsils—					
Tonsillitis	1	68	...	69	...
Pharyngitis	...	10	...	10	...
110. Affections of the Œsophagus	...	3	1	3	...
111. A.—Ulcer of the Stomach	2	49	1	51	...
B.—Ulcer of the Duodenum	...	44	1	44	4
112. Other affections of the Stomach—					
Gastritis	5	141	...	146	10
Dyspepsia, etc.	2	386	...	388	1
113. Diarrhœa and Enteritis—					
Under two years	1	125	9	126	4
114. Diarrhœa and Enteritis—					
Two years and over	6	449	38	455	4
Colitis	..	41	3	41	...
Ulceration	...	1	...	1	...
114a. Sprue	...	...	...	...	...
115. Ankylostomiasis	44	2,098	23	2,142	11
Carried over	332	14,948	623	15,280	222

Diseases	Remaining in Hospital at end of 1926	Yearly Total		Total cases treated	Remaining in Hospital at end of 1927
		Admissions	Deaths		
Brought forward ...	332	14,948	623	15,280	222
116. Diseases due to Intestinal Parasites—					
(*a*) Cestoda (Tænia) ...	...	...	...	...	...
(*b*) Trematoda (Flukes) ...	...	...	...	...	...
(*c*) Nematoda (other than Ankylostoma)—					
Ascaris ...	6	103	1	109	4
Trichocephalus dispar. ...	...	2	...	2	...
Trichina ...	...	...	...	...	...
Dracunculus ...	...	...	...	...	...
Strongylus ...	...	...	...	...	...
Oxyuris ...	...	...	...	...	...
(*d*) Coccidia ...	...	...	...	...	...
(*e*) Other parasites ...	...	19	...	19	1
(*f*) Unclassified ...	...	40	...	40	1
117. Appendicitis ...	2	220	3	222	4
118. Hernia ...	1	132	3	133	...
119. A.—Affections of the Anus, Fistula, &c ...	...	94	...	94	2
B.—Other affections of the Intestines—					
Enteroptosis ...	...	23	...	23	1
Constipation ...	...	86	...	86	1
120. Acute yellow Atrophy of the Liver ...	...	...	...	...	...
121. Hydatid of the Liver ...	...	...	...	...	...
122. Cirrhosis of the Liver—					
(*a*) Alcoholic ...	...	13	1	13	...
(*b*) Other forms ...	2	42	7	44	...
123. Biliary Calculus ...	...	9	...	9	...
124. Other affections of the Liver—					
Abscess ...	1	23	1	24	1
Hepatitis ...	1	79	5	80	2
Cholecystitis ...	...	25	1	25	...
Jaundice ...	...	7	1	7	...
125. Diseases of the Pancreas ...	1	4	1	5	...
126. Peritonitis (of unkown cause) ...	1	10	5	11	...
127. Other affections of the Digestive System ...	7	210	5	217	1
VII.—Diseases of the Genito-urinary System (non Venereal.)					
128. Acute Nephritis ...	22	566	68	588	7
129. Chronic ...	6	98	26	104	2
130. A.—Chyluria ...	...	3	...	3	...
B.—Schistosomiasis ...	...	63	...	63	...
131. Other affections of the Kidneys—					
Pyelitis, etc. ...	...	23	1	23	...
132. Urinary Calculus ...	...	9	...	9	...
133. Diseases of the Bladder— ...					
Cystitis ...	2	169	10	171	4
134. Diseases of the Urethra—					
(*a*) Structure ...	...	53	2	53	3
(*b*) Other ...	1	16	2	17	...
135. Diseases of Prostrate—					
Hypertrophy ...	...	9	...	9	1
Prostatitis ...	...	3	...	3	...
136. Diseases (non Venereal) of the Genital Organs of Man—	1	60	...	61	1
Urinary Fistulæ ...	...	12	...	12	2
Orchistis ...	...	78	...	78	3
Hydrocele ...	1	155	...	156	...
Ulcer of Penis ...	...	15	...	15	1
137. Cysts or other non-malignant Tumours of the Ovaries ...	1	29	...	30	...
138. Salpingitis—					
Abcess of the Pelvis ...	...	46	2	46	2
139. Uterine Tumours (non-malignant) ...	...	34	...	34	...
140. Uterine Hæmorrhage non-puerperal— ...		15	...	15	...
Carried over ...	388	17,545	768	17,933	266

Diseases	Remaining in Hospital at end of 1926	Yearly Total		Total cases treated	Remaining in Hospital at end of 1927
		Admissions	Deaths		
Brought forward ...	388	17,545	768	17,933	266
141. A.—Metritis ...	1	55	...	56	...
B.—Other affections of the Female Genital Organs—	3	94	...	97	3
Displacements of Uterus ...	1	41	...	42	1
Amenorrhœa ...	...	10	...	10	...
Dysmenorrhœa ...	...	17	...	17	...
Leucorrhœa ...	...	43	...	43	...
142. Diseases of the Breast (non-puerperal)—					
Mastitis ...	...	8	...	8	1
Abscess of Breast ...	3	49	...	52	...
VIII—Puerperal State.					
143. A.—Normal Labour ...	17	458	...	475	4
B.—Accidents of Pregnancy—					...
(*a*) Abortion ...	3	43	1	46	..
(*b*) Ectopic Gestation ...	1	3	...	4	...
(*c*) Other accidents of Pregnancy ...	...	39	...	39	...
144. Puerperal Hæmorrhage ...	...	...	...	...	...
145. Other accidents of Parturition ...	...	7	4	7	1
146. Puerperal Septicæmia ...	...	18	7	18	...
147. Phlegmasia Dolens ...	...	...	...	...	...
148. Puerperal Eclampsia ...	...	4	3	4	...
149. Sequelæ of Labour ...	...	6	4	6	1
150. Puerperal affections of the Breast ...	...	...	...	...	...
IX.—Affections of the Skin and Celular Tissues.					
151. Gangrene ...		24	3	24	...
152. Boil ...		9	...	9	2
Carbuncle ...	1	56	...	57	6
153. Abscess ...	7	494	5	501	16
Whitlow ...	3	159	...	162	1
Cellulitis ...	22	684	5	706	18
154. A.—Tinea ...	...	23	...	23	...
B.—Scabies ...	3	48	...	51	...
155. Other Diseases of the Skin ...	6	281	...	287	7
Erythema ...	...	...	...	...	...
Urticaria ...	...	15	...	15	...
Eczema ...	1	84	...	85	...
Herpes ...	...	6	...	6	...
Psoriasis ...	...	17	...	17	...
Elephantiasis ...	1	28	...	29	...
Myiasis ...	...	...	...	...	...
Chigœs ...	...	...	...	...	...
Cutaneous Leishmaniasis ...	...	...	...	...	...
X.—*Diseases of the Bones and Organs of Locomotion (other than Tuberculous.)*					
156.—Diseases of Bones—					
Osteitis ...	7	59	...	66	1
157. Diseases of Joints—					
Arthritis ...	4	95	2	99	2
Synovitis ...	...	10	...	10	...
158. Other Diseases of Bones or Organs of Locomotion ...	4	129	3	133	5
XI—*Malformations*					
159. Malformations—					
Hydrocephalus ...	...	1	...	1	...
Hypospadias ...	...	...	...	...	...
Spina Bifida, &c. ...	...	...	...	...	...
Undefined ...	...	11	...	11	...
XII—*Diseases of Infancy*					
160. Congenital Debility ...	...	41	23	41	...
161. Premature Birth ...	1	11	6	12	...
162. Other affections of Infancy ...	2	100	8	102	...
163. Infant neglect (infants of three months or other ...	...	...	...	...	...
Carried over ...	479	20,825	842	21,304	335

Diseases	Remaining in Hospital at end of 1926	Yearly Total		Total cases treated	Remaining in Hospital at end of 1927
		Admissions	Deaths		
Brought forward ...	479	20,825	842	21,304	335
XIII.—*Affections of Old Age*					
164. Senility—Senile Dementia ...	12	223	26	235	3
XIV.—*Affections produced by External Causes.*					
165. Suicide by Poisoning ...	...	3	...	3	...
166. Corrosive Poisoning (intentional) ...	...	16	3	16	...
167. Suicide by Gas Poisoning ...	...	...	...	...	...
168. Suicide by Hanging or Strangulation ...	...	1	...	1	...
169. Suicide by Drowning ...	...	...	...	...	...
170. Suicide by Firearms ...	...	...	...	...	...
171. Suicide by cutting or stabbing Instruments.	...	...	...	...	...
172. Suicide by jumping from a height ...	...	...	...	...	...
173. Suicide by crushing ...	...	...	...	...	...
174. Other Suicides ...	...	...	...	...	...
175. Food Poisoning—Botulism ...	...	3	...	3	...
176. Attacks of poisonous—					
Snake Bite ...	...	...	...	...	...
Insect Bite ...	...	...	...	...	...
177. Other accidental Poisonings ...	...	3	1	3	...
178. Burns (by Fire) ...	2	72	18	74	...
179. Burns (other than by Fire) ...	...	20	7	20	1
180. Suffocation (accidental) ...	...	...	...	...	...
181. Poisoning by Gas (accidental) ...	...	...	...	...	...
182. Drowning (accidental) ...	...	2	...	2	...
183. Wounds (by Firearms, war excepted) ...	...	15	2	15	2
184. Wounds (by cutting or stabbing Instruments)	13	536	8	549	9
185. Wounds (by Fall) ...	2	69	1	71	...
186. Wounds (in Mines or Quarries) ...	...	...	...	...	...
187. Wounds (by Machinery) ...	1	36	...	37	...
188. Wounds (crushing, *e.g.* railway accidents, &c.) ...	2	15	2	17	...
189. Injuries inflicted by Animals, Bites, Kicks, etc. ...	...	27	...	27	...
190. Wounds inflicted on Active Service ...	...	...	...	...	...
191. Executions of civilians by belligerents ...	...	...	...	...	...
192. A.—Over fatigue ...	...	...	...	...	...
B.—Hunger or Thirst ...	...	...	...	...	...
193. Exposure to Cold Frost bite, &c. ...	...	...	...	...	...
194. Exposure to heat—					
Heatstroke ...	...	...	...	...	...
Sunstroke ...	...	1	...	1	...
195. Lightning Stroke ...	...	...	...	...	...
196. Electric Shock ...	...	1	...	1	...
197. Murder by Firearms ...	...	...	...	...	...
198. Murder by cutting or stabbing Instrument	...	...	...	...	...
199. Murder by other means ...	...	...	...	...	...
200. Infanticide (Murder of an infant under one year) ...	...	...	...	...	...
201. A.—Dislocation ...	3	32	...	35	1
B.—Sprain ...	...	61	...	61	...
C.—Fracture ...	7	241	10	248	9
202. Other external Injuries ...	16	787	...	803	4
203. Deaths by Violence of unknown cause ...	...	...	...	...	...
XV.—*Ill-Defined Diseases.*					
204. Sudden Deaths (cause unknown) ...	...	...	...	...	...
205. A.—Diseases not already specified or ill-defined ...	1	537	8	538	19
Ascites ...	9	129	1	138	6
Œdema ...	..	7	1	7	...
Asthenia ...	...	6	...	6	...
Shock ...	...	5	5	5	...
Hyperpyrexia ...	...	1	...	1	...
B.—Malingering ...	...	110	...	110	2
XVI.—*Diseases the total of which have not caused 10 Deaths* ...	16	1,034	2	1,050	18
Total ...	563	24,818	937	25,381	409

Summary.

Diseases	Remaining in Hospital at end of 1926	Yearly Total		Total cases treated	Remaining in Hospital at end of 1927
		Admissions	Deaths		
I.—Epidemic, Endemic, and Infectious Diseases.	177	6,837	294	7,014	121
II.—General Diseases not mentioned above ...	35	1,275	40	1,310	16
III.—Affections of the Nervous System and Organs of the Senses ...	15	859	33	874	9
IV.—Affections of the Circulatory System ...	7	475	32	482	8
V.—Affections of the respiratory System ...	37	1,968	147	2,005	34
VI.—Diseases of the Digestive System ...	83	4,675	111	4,758	52
VII.—Diseases of the Genito-Urinary System *(non-venereal)* ...	42	1,773	111	1,815	31
VIII.—Puerperal State	21	578	19	599	6
IX.—Affections of the Skin and Cellular Tissues.	44	1,928	13	1,972	50
X.—Diseases of Bones and Organs of Locomotion *(other than Tuberculous)*	15	293	5	308	8
XI.—Malformations ...	...	12	...	12	...
XII.—Diseases of Infancy	3	152	37	155	...
XIII.—Affections of Old age	12	223	26	235	3
XIV.—Affections produced by external Causes...	46	1,941	52	1,987	26
XV.—Ill-Defined Diseases ...	10	795	15	805	27
XVI.—Diseases, the total of which have not caused 10 deaths	16	1,034	2	1,050	18
Total	563	24,818	937	25,381	409
In 1926 ...	...	21,997	...	...	...

Return of Surgical Operations

Operations	Number	Death
Operations for :—		
Tumors	112	1
Evacuation of Abscesses ...	1,286	11
Operation on :—		
Blood vessels	1	...
Lymphatic Glands	47	...
Skin and Subcutaneous Tissues	135	...
Bones	117	3
Nerves	...	...
Joints ...	49	1
Muscles and Tendons ...	42	...
Skull and Brain	11	2
Eye	175	...
Ear	33	1
Head and Face	90	2
Chest	35	...
Abdominal Cavity ...	494	17
Spleen ...	1	...
Rectum and Anus ...	121	1
Urinary system	86	3
Male Generative Organs ...	222	3
Female Generative Organs ...	141	2
Amputations	49	1
Obstetric Operations	59	1
Other Operations ...	551	1
Total ...	3,839	50

ANNEXURE A

RETURN OF ARTICLES UNSERVED AND SEIZED IN PORT LOUIS DURING THE YEAR 1927

Quality of stuff	Quantity	Method of disposal	Action
Rotten dates	... 1 petroleum tin	... Dumped	... Nil
Rotten potatoes	... 150 bags	... Sank outer anchorage	... Nil
Salt fish	... 75 lb.	... Dumped	... Nil
Tinned Food			
Preserved from China	... 30 tins	... Dumped	... Nil
Salt fish	... 100 lb.	... Dumped	... Nil